

NATURAL HERITAGE RESOURCES OF VIRGINIA:

RARE ANIMAL SPECIES

MARCH 2003

**VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION
DIVISION OF NATURAL HERITAGE
217 GOVERNOR STREET
RICHMOND, VIRGINIA 23219
(804) 786-7951**

List Compiled by

**Steven M. Roble
Staff Zoologist**

Cover illustrations (left to right) by Megan Rollins

**Red-cockaded Woodpecker
Indiana Myotis
Regal Fritillary**

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APRIL 2003**

INTRODUCTION

The Virginia Department of Conservation and Recreation's Division of Natural Heritage (DCR-DNH) was established to protect Virginia's biological diversity. DCR-DNH is the state's first comprehensive program for conservation of our natural heritage, and includes an intensive statewide biological inventory, field surveys, electronic and manual database management, environmental review capabilities, and natural area protection and stewardship. Through its actions the Division identifies Natural Heritage Resources that are in need of conservation attention while creating an efficient means of evaluating the impacts of balanced economic growth. Natural Heritage Resources are defined in the Virginia Natural Area Preserves Act of 1989 (Section 10.1-209 through 217, Code of Virginia), as the habitat of rare, threatened, and endangered plant and animal species; exemplary natural communities, habitats, and ecosystems; and other natural features of the Commonwealth.

To achieve this protection, DCR-DNH maintains lists of the most significant elements of our natural diversity. These lists focus the Division's inventory on the Natural Heritage Resources most likely to be lost without conservation action in the near future. Most importantly, these lists are useful not only for DCR-DNH, but can be used by other agencies, organizations, and individuals to assist in the determination of actions in protection and development decision-making. In formulating these lists, the Division uses information from previous studies, museum records, observations and opinions of experts, DCR-DNH staff scientists, and field inventories.

The Virginia Rare Animal List contains information on the legal and biological status of Virginia's rarest known native animals, including vertebrates, insects, and selected other invertebrate groups. This list includes those species that are believed to be sufficiently rare or threatened to merit an inventory of their status and locations. Certain marine species that are listed as federally endangered or threatened are only included in the appendices. Only those species that use discrete habitat patches or can directly benefit from habitat protection are included on the main taxonomic lists.

Natural Heritage Resource lists are necessarily dynamic, with updates occurring as new data become available. Such revisions assure the most current knowledge of the status of Virginia's animals. Animals are added to the list when it is determined that they have become rare or threatened to such an extent that their continued existence in the Commonwealth is in jeopardy. Animals are deleted from the list when additional field surveys or other new data indicate they are more common than previously believed and do not warrant priority conservation efforts.

Please check with the DCR Division of Natural Heritage to ensure that you are using the most current edition of the Rare Animal List. Also, if you have information that could assist in refining this list, please contact a Natural Heritage zoologist.

All animals that are officially protected by federal or state endangered species acts are included in this list (except as noted above). Federally listed species are protected by the Endangered Species Act of 1973, as amended. The U.S. Department of the Interior's Fish and Wildlife Service administers the Act, listing and protecting federally endangered and threatened species. The Virginia Department of Game and Inland Fisheries has the regulatory responsibility for the listing and protection of the state's endangered and threatened animals (excluding the Class Insecta) under the Virginia Endangered Species Act (Section 29.1-564 through 570, Code of Virginia). The Office of Plant Protection within the Virginia Department of Agriculture and Consumer Services has regulatory responsibility for the listing and protection of the state's insects (and plants) under the Virginia Endangered Plant and Insect Act (Section 3.1-1020 through 1030, Code of Virginia). DCR-DNH is a primary source of recommendations to each of the regulatory agencies for species that are in need of listing as endangered or threatened.

The Virginia Department of Conservation and Recreation, the U.S. Fish and Wildlife Service, the Virginia Department of Game and Inland Fisheries, and the Virginia Department of Agriculture and Consumer Services work cooperatively to insure the continued survival of Virginia's diverse fauna and other elements of natural diversity. The Division of Natural Heritage also works closely with many other state and federal agencies, local governments, conservation organizations, and many other organizations and individuals to seek adequate protection of Virginia's natural heritage.

LIST FORMAT

The Rare Animal List is sorted by broad taxonomic groups and then ordered alphabetically by scientific name within each group. The list format consists of six fields: scientific name, common name, global rank, state rank, federal status, and state status. These fields are also used in the lists appearing in Appendices 1-4. To aid in the interpretation of the lists, a brief explanation of each field and a summary of abbreviations follow.

Column 1. Scientific name:

Nomenclature of animals is not contained in any single source. The most recent taxonomic sources are examined by the staff zoologist and, when necessary, direct consultations with experts are used to maintain the most scientifically accepted names for all animal groups. Divergences from these opinions are rare and generally occur only while an ongoing taxonomic study is being conducted. If the user has questions or comments regarding the scientific names used herein, please contact the Division's staff zoologist.

Column 2. Common name:

A common name is provided for the convenience of the user. Standard common names have been developed and universally adopted for only a few animal groups; therefore, the user is cautioned to use scientific names whenever possible. The common names for birds, fishes, and a few selected aquatic invertebrate groups (e.g., mussels) are recognized as stable. Most invertebrate species lack common names and it may not be practical to provide such names. They are usually indicated in the list as "a tiger beetle", "a millipede", etc. The primary sources of common names applied to species in selected groups included in this list can be found on page 5. Many other common names that appear in the list, especially those of invertebrates, are not widely used or universally accepted.

Column 3. Global rank:

Global ranks are assigned by a consensus of the network of natural heritage programs, scientific experts, and The Association for Biodiversity Information to designate the rangewide rarity of a species or subspecies. This system was developed by The Nature Conservancy and is widely used by other agencies (e.g., U.S. Fish and Wildlife Service, U.S. Forest Service) and organizations as the best available scientific and objective assessment of an animal's rarity and the level of threat to its existence. The ranks are assigned after considering a suite of factors including number of occurrences, number of individuals, and severity of threats. Global ranks found in the Rare Animal List are explained below:

- G1 Extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
- G2 Very rare and imperiled with 6 to 20 occurrences or few remaining individuals; or because of some factor(s) making it vulnerable to extinction.
- G3 Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range; or vulnerable to extinction because of other factors. Usually fewer than 100 occurrences are documented.
- G4 Common and apparently secure globally, though it may be rare in parts of its range, especially at the periphery.
- G5 Very common and demonstrably secure globally, though it may be rare in parts of its range, especially at the periphery.
- GH Formerly part of the world's fauna with some expectation that it may be rediscovered; generally applies to species that have not been verified for an extended period (usually >15 years) and for which some inventory has been attempted recently.
- GX Believed to be extinct throughout its range with virtually no likelihood of rediscovery.

- GU Possibly rare, but status uncertain and more data needed.
- G? Unranked, or, if following a ranking, rank uncertain (e.g., G3?).
- G_G_ The rank is uncertain, but considered to be within the indicated range of ranks (also, T_T_).
- G_Q Taxon has a questionable taxonomic assignment (e.g., G3Q).
- G_T_ Signifies the rank of a subspecies (e.g., G5T1 would apply to a subspecies if the species is demonstrably secure globally (G5) but the subspecies warrants a rank of T1, critically imperiled.)

Column 4. State rank:

State ranks are assigned in a manner similar to that described for global ranks, with values that generally range from S1-S5, but consider only factors within the political boundaries of Virginia. For example, an animal that is endemic to Virginia (found nowhere else in the world) will have the same global and state ranks, whereas a species that may be common in the northeastern United States but only known from a few occurrences in Virginia will have global and state ranks that differ. State ranks found in the Rare Animal List are explained below:

- S1 Extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals in Virginia; or because of some factor(s) making it especially vulnerable to extirpation in Virginia.
- S2 Very rare and imperiled with 6 to 20 occurrences or few remaining individuals in Virginia; or because of some factor(s) making it vulnerable to extirpation in Virginia.
- S3 Rare to uncommon in Virginia with between 20 and 100 occurrences; may have fewer occurrences if found to be common or abundant at some of these locations; may be somewhat vulnerable to extirpation in Virginia.
- SH Formerly part of Virginia's fauna with some expectation that it may be rediscovered; generally applies to species that have not been verified in the state for an extended period (usually >15 years) and for which some inventory has been attempted recently.
- SX Believed to be extirpated from Virginia with virtually no likelihood of rediscovery.
- SR Reported for Virginia, but without persuasive documentation that would provide a basis for either accepting or rejecting the report.
- SU Possibly rare, but status uncertain and more data needed.
- S_? Rank uncertain. For example the rank S2? denotes a species that may range from S1 to S3.
- S_S_ Rank is uncertain, but considered to be within the indicated range of ranks.
- S_B/S_N Breeding and nonbreeding status of an animal (primarily used for birds) in Virginia, when they differ.
- SZN Long distance migrant whose occurrences outside of the breeding season are not monitored or a species whose wintering populations are transitory and usually do not occur regularly at specific localities.
- SN? Long distance migrant that has been recorded north and south of Virginia waters and should eventually be found along the coast of Virginia.
- SA State accidental; not a regular member of the Virginia fauna but recorded in the state at least once.

Column 5. Federal status:

Federal status is determined by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. This status is used for all animals listed as endangered or threatened by the U.S. government and receiving protection under the federal Endangered Species Act. The list also notes those species that have been formally proposed for listing or are currently candidates under consideration for listing. The federal status formerly known as "Category 2, candidate species" was abolished on February 28, 1996; species formerly designated as "Category 1, candidate species" are now referred to simply as "candidate species."

- LE Listed Endangered. A taxon threatened with extinction throughout all or a significant portion of its range.
- LT Listed Threatened. A taxon likely to become endangered in the foreseeable future.
- LT/SA Listed as Threatened due to Similarity of Appearance. The species so closely resembles an endangered or threatened species or population that enforcement personnel of the U.S. Fish and Wildlife Service cannot readily distinguish between the taxa (e.g., the northern population of the bog turtle is federally listed as endangered, but turtles from the southern population, which includes Virginia, are not readily distinguishable from them).
- LT/PDL Listed as Threatened but proposed for delisting. The U.S. Fish and Wildlife Service has proposed that this species be removed from the list of Endangered and Threatened wildlife. However, at the present time, the species is still listed as Threatened pending further action and is thus protected under the Endangered Species Act.
- PE Proposed Endangered. A taxon proposed for listing as endangered.
- PT Proposed Threatened. A taxon proposed for listing as threatened.
- C Candidate. There is enough available information to propose the species for listing, but listing is "precluded by other pending proposals of higher priority". (Formerly Candidate, Category 1)

Column 6. State status:

State status is determined by the Virginia Department of Game and Inland Fisheries (all animals except insects) and the Virginia Department of Agriculture and Consumer Services (insects only). No insects are currently listed as state endangered or threatened by the Virginia Department of Agriculture and Consumer Services. An informal list of "Special Concern" species has also been developed by the Virginia Department of Game and Inland Fisheries.

- LE Listed Endangered; defined as a species that is in danger of extinction throughout all or a significant portion of its range.
- LT Listed Threatened; defined as a species that is likely to become endangered within the foreseeable future.
- SC Special Concern; animals that merit special concern according to the Virginia Department of Game and Inland Fisheries. This is not a legal category.

PRIMARY SOURCES OF COMMON NAMES**Fish**

Robins, C. R., R. M. Bailey, C. E. Bond, J. R. Brooker, E. A. Lachner, R. N. Lea, and W. B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Canada. Fifth Edition. American Fisheries Society, Special Publication 20, Bethesda, Maryland. 183 pp.

Amphibians and Reptiles

Crother, B. I. (compiler). 2000. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding. Society for the Study of Amphibians and Reptiles, Herpetological Circular Number 29. 82 pp.

Birds

American Ornithologists' Union. 1998. Check-list of North American Birds. Seventh Edition. American Ornithologists' Union, Washington, D.C. 829 pp.

Mammals

Jones, C., R. S. Hoffmann, D. W. Rice, M. D. Engstrom , R. D. Bradley, D. J. Schmidly, C. A. Jones, and R. J. Baker. 1997. Revised Checklist of North American Mammals North of Mexico, 1997. Texas Tech University Museum, Occasional Paper Number 173. 19 pp.

Gastropoda and Bivalvia

Turgeon, D. D., J. F. Quinn, Jr., A. E. Bogan, E. V. Coan, F. G. Hochberg, W. G. Lyons, P. M. Mikkelsen, R. J Neves, C. F. E. Roper, G. Rosenberg, B. Roth, A. Scheltema, M. J. Sweeney, F. G. Thompson, M. Vecchione, and J. D. Williams. 1998. Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: Mollusks. 2nd Edition. American Fisheries Society, Special Publication 26, Bethesda, Maryland. 526 pp.

Odonata

Dragonfly Society of the Americas. 1996. Common names of North American dragonflies and damselflies. Supplement to Argia, 8(2): 4 pp.

Lepidoptera

Covell, C. V., Jr. 1984. A Field Guide to the Moths of Eastern North America. Houghton Mifflin Company, Boston. 496 pp.

Miller, J. Y. 1992. The Common Names of North American Butterflies. Smithsonian Institution Press, Washington, D. C. 177 pp.

Plecoptera

Stark, B. P., K. W. Stewart, S. W. Szczytko, and R. W. Baumann. 1998. Common names of stoneflies (Plecoptera) from the United States and Canada. Ohio Biological Survey Notes 1: 1-18.

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VIRGINIA RARE ANIMAL LIST

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
VERTEBRATES					
FISH					
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	G3	SX	LE	LE
<i>Acipenser oxyrinchus</i>	Atlantic sturgeon	G3	S2		SC
<i>Ameiurus brunneus</i>	Snail bullhead	G4	S2		
<i>Ammocrypta clara</i> = <i>Etheostoma clarum</i>	Western sand darter	G3	S1		LT
<i>Aplodinotus grunniens</i>	Freshwater drum	G5	S2		
<i>Cottus baileyi</i>	Black sculpin	G4Q	S2		
<i>Cottus cognatus</i>	Slimy sculpin	G5	S2		
<i>Cottus</i> sp 1	Bluestone sculpin	G2	S2		
<i>Cottus</i> sp 4	Clinch sculpin	G1G2	S1S2		
<i>Cottus</i> sp 5	Holston sculpin	G2	S2		
<i>Cyprinella labrosa</i> = <i>Hybopsis labrosa</i>	Thicklip chub	G4	SH		
<i>Cyprinella monacha</i> = <i>Hybopsis monacha</i>	Turquoise shiner (or spotfin chub)	G2	S1	LT	LT
<i>Cyprinella whipplei</i> = <i>Notropis whipplei</i>	Steelcolor shiner	G5	S1		LT
<i>Enneacanthus chaetodon</i>	Blackbanded sunfish	G4	S1		LE
<i>Erimystax cahni</i> = <i>Hybopsis cahni</i>	Slender chub	G1	S1	LT	LT
<i>Erimyzon suetta</i>	Lake chubsucker	G5	S2		
<i>Etheostoma acuticeps</i>	Sharphead darter	G3	S1		LE
<i>Etheostoma caeruleum</i>	Rainbow darter	G5	S2		
<i>Etheostoma camurum</i>	Bluebreast darter	G4	S2		SC
<i>Etheostoma chlorobranchium</i>	Greenfin darter	G4	S1		LT
<i>Etheostoma cinereum</i>	Ashy darter	G2G3	S1		
<i>Etheostoma collis</i>	Carolina darter	G3	S2		LT
<i>Etheostoma denoncourti</i> = <i>Etheostoma tippecanoe</i> (in part)	Golden darter	G2	S1		LT*
<i>Etheostoma jessiae</i> = <i>Etheostoma stigmaeum jessiae</i>	Blueside darter	G4Q	S1		
<i>Etheostoma meadiae</i> = <i>Etheostoma stigmaeum meadiae</i>	Bluespar darter	G4	S2		
<i>Etheostoma osburni</i>	Candy darter	G3	S1		SC
<i>Etheostoma percnurum</i>	Duskytail darter	G1	S1	LE	LE
<i>Etheostoma swannanoa</i>	Swannanoa darter	G4	S2		
<i>Etheostoma variatum</i>	Variegated darter	G5	S1		LE
<i>Etheostoma vulneratum</i>	Wounded darter	G3	S2S3		
<i>Fundulus lineolatus</i>	Lined topminnow	G5	S2S3		
<i>Fundulus rathbuni</i>	Speckled killifish	G4	S2		SC
<i>Hybopsis hypsinotus</i> = <i>Notropis hypsinotus</i>	Highback chub	G4	S2		
<i>Ichthyomyzon bdellium</i>	Ohio lamprey	G3G4	S2		
<i>Ichthyomyzon greeleyi</i>	Mountain brook lamprey	G3G4	S2		
<i>Labidesthes sicculus</i>	Brook silverside	G5	S2		SC

*Listed as state threatened under the name Tippecanoe Darter (*Etheostoma tippecanoe*)

VA DEPARTMENT OF CONSERVATION & RECREATION
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VIRGINIA RARE ANIMAL LIST

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
FISH (continued)					
<i>Lythrurus lirus</i>	Mountain shiner	G4	S2S3		
= <i>Notropis lirus</i>					
<i>Moxostoma carinatum</i>	River redhorse	G4	S2S3		SC
<i>Notropis alborus</i>	Whitemouth shiner	G4	S1		LT
<i>Notropis ariommus</i>	Popeye shiner	G3	S2S3		SC
<i>Notropis atherinoides</i>	Emerald shiner	G5	S1S2		LT
<i>Notropis bifrenatus</i>	Bridle shiner	G5	S2		SC
<i>Notropis semperasper</i>	Roughhead shiner	G2G3	S2S3		SC
<i>Notropis spectrunculus</i>	Mirror shiner	G4	S2		SC
<i>Notropis stramineus</i>	Sand shiner	G5	S2		
<i>Noturus eleutherus</i>	Mountain madtom	G4	S2S3		
<i>Noturus flavipinnis</i>	Yellowfin madtom	G1	S1	LT	LT
<i>Noturus flavus</i>	Stonecat	G5	S2		SC
<i>Noturus gilberti</i>	Orangefin madtom	G2	S2		LT
<i>Noturus insignis</i> ssp 1	Spotted marginated madtom	G5T1Q	S1		
<i>Percina aurantiaca</i>	Tangerine darter	G4	S2S3		
<i>Percina burtoni</i>	Blotchside logperch	G2	S1		SC
<i>Percina copelandi</i>	Channel darter	G4	S2		SC
<i>Percina crassa</i>	Piedmont darter	G4	S1		
<i>Percina evides</i>	Gilt darter	G4	S2		
<i>Percina macrocephala</i>	Longhead darter	G3	S1S2		LT
<i>Percina maculata</i>	Blackside darter	G5	SX		
<i>Percina rex</i>	Roanoke logperch	G1G2	S1S2	LE	LE
<i>Percina sciera</i>	Dusky darter	G5	S1S2		
<i>Percopsis omiscomaycus</i>	Trout-perch	G5	SX		
<i>Phenacobius crassilabrum</i>	Fatlips minnow	G3G4	S2		SC
<i>Phenacobius mirabilis</i>	Suckermouth minnow	G5	S1S2		
<i>Phenacobius teretulus</i>	Kanawha minnow	G3G4	S2S3		
<i>Phoxinus cumberlandensis</i>	Blackside dace	G2	S1	LT	
<i>Phoxinus tennesseensis</i>	Tennessee dace	G3	S1		LE
<i>Phoxinus</i> sp 1	A dace	G1	S1		
<i>Pimephales vigilax</i>	Bullhead minnow	G5	S1		
<i>Polyodon spathula</i>	Paddlefish	G4	S1		LT
<i>Scartomyzon</i> sp 1	Brassy jumprock	G4	S1S2		
<i>Stizostedion canadense</i>	Sauger	G5	S2S3		SC
<i>Thoburnia hamiltoni</i>	Rustyside sucker	G3	S2		SC
= <i>Moxostoma hamiltoni</i>					

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SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
AMPHIBIANS					
<i>Ambystoma mabeani</i>	Mabee's salamander	G4	S1S2		LT
<i>Ambystoma talpoideum</i>	Mole salamander	G5	S1S2		SC
<i>Ambystoma tigrinum</i>	Tiger salamander	G5	S1		LE
<i>Bufo quercicus</i>	Oak toad	G5	S1S2		SC
<i>Cryptobranchus alleganiensis</i>	Hellbender	G3G4	S2S3		SC
<i>Desmognathus marmoratus</i> = <i>Leurognathus marmoratus</i>	Shovel-nosed salamander	G4	S2		SC
<i>Desmognathus wrighti</i>	Pygmy salamander	G3G4	S2		SC
<i>Eurycea wilderae</i>	Blue Ridge two-lined salamander	G5	S2		
<i>Hyla gratiosa</i>	Barking treefrog	G5	S1		LT
<i>Necturus maculosus</i>	Mudpuppy	G5	S2		
<i>Necturus punctatus</i>	Dwarf waterdog	G4	S2S3		
<i>Plethodon hubrichti</i>	Peaks of Otter salamander	G2	S2		SC
<i>Plethodon punctatus</i>	Cow Knob salamander	G3	S2		SC
<i>Plethodon shenandoah</i>	Shenandoah salamander	G1	S1	LE	LE
<i>Plethodon ventralis</i>	Southern zigzag salamander	G4	S1		
<i>Plethodon virginia</i>	Shenandoah Mountain salamander	G2G3Q	S2		
<i>Plethodon welleri</i>	Weller's salamander	G3	S2		SC
<i>Siren intermedia</i>	Lesser siren	G5	S2		
REPTILES					
<i>Apalone spinifera</i>	Spiny softshell	G5	S2		
<i>Caretta caretta</i>	Loggerhead (sea turtle)	G3	S1B/S1N	LT	LT
<i>Crotalus horridus atricaudatus</i>	Canebrake rattlesnake	G4TUQ	S1		LE
<i>Deirochelys reticularia</i>	Chicken turtle	G5	S1		LE
<i>Eumeces anthracinus</i>	Coal skink	G5	S2		
<i>Glyptemys insculpta</i> = <i>Clemmys insculpta</i>	Wood turtle	G4	S2		LT
<i>Glyptemys muhlenbergii</i> = <i>Clemmys muhlenbergii</i>	Bog turtle	G3	S1S2	LT/SA	LE
<i>Graptemys geographica</i>	Northern map turtle	G5	S2S3		
<i>Lampropeltis getula nigra</i>	Eastern black kingsnake	G5T5	S2		
<i>Lepidochelys kempii</i>	Kemp's ridley (sea turtle)	G1	S1N	LE	LE
<i>Ophisaurus ventralis</i>	Eastern glass lizard	G5	S1		LT
<i>Pituophis melanoleucus</i>	Pine snake	G4	S1S3		
<i>Regina rigida</i>	Glossy crayfish snake	G5	S1		
<i>Sternotherus minor</i>	Loggerhead musk turtle	G5	S2		
<i>Tantilla coronata</i>	Southeastern crowned snake	G5	S2		
<i>Trachemys scripta troostii</i>	Cumberland slider	G5T3T4	S1		
<i>Virginia valeriae pulchra</i>	Mountain earthsnake	G5T3T4	S1		SC

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SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
BIRDS					
<i>Actitis macularia</i>	Spotted Sandpiper	G5	S2B/SZN		
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	G5	S1B/S1N		SC
<i>Aimophila aestivalis</i>	Bachman's Sparrow	G3	S1B		LT
<i>Ammodramus caudacutus</i>	Saltmarsh Sharp-tailed Sparrow	G4	S2B/S3N		SC
<i>Ammodramus henslowii</i>	Henslow's Sparrow	G4	S1B		LT
<i>Anas discors</i>	Blue-winged Teal	G5	S1B/S2N		
<i>Anas strepera</i>	Gadwall	G5	S2B/S3N		
<i>Aquila chrysaetos</i>	Golden Eagle	G5	SHB/S1N		
<i>Ardea alba</i>	Great Egret	G5	S2B/S3N		SC
<i>Asio flammeus</i>	Short-eared Owl	G5	S1B/S3N		
<i>Asio otus</i>	Long-eared Owl	G5	S1		SC
<i>Bartramia longicauda</i>	Upland Sandpiper	G5	S1B/SZN		LT
<i>Botaurus lentiginosus</i>	American Bittern	G4	S1B/S2N		
<i>Carpodacus purpureus</i>	Purple Finch	G5	S1B/S5N		SC
<i>Catharus guttatus</i>	Hermit Thrush	G5	S1B/S5N		SC
<i>Catharus ustulatus</i>	Swainson's Thrush	G5	S1B/SZN		
<i>Charadrius melanotos</i>	Piping Plover	G3	S2B/S1N	LT	LT
<i>Charadrius wilsonia</i>	Wilson's Plover	G5	S1B/SZN		LE
<i>Chondestes grammacus</i>	Lark Sparrow	G5	SHB/SZN		
<i>Circus cyaneus</i>	Northern Harrier	G5	S1B/S3S4N		SC
<i>Cistothorus platensis</i>	Sedge Wren	G5	S1B/S1S2N		SC
<i>Contopus cooperi</i> = <i>Nuttallornis borealis</i>	Olive-sided Flycatcher	G4	SHB/SZN		
<i>Dendroica fusca</i>	Blackburnian Warbler	G5	S2B/SZN		
<i>Dendroica magnolia</i>	Magnolia Warbler	G5	S2B/SZN		SC
<i>Egretta caerulea</i>	Little Blue Heron	G5	S2B/S3N		SC
<i>Egretta thula</i>	Snowy Egret	G5	S2B/S3N		
<i>Egretta tricolor</i>	Tricolored Heron	G5	S2B/S3N		SC
<i>Empidonax alnorum</i>	Alder Flycatcher	G5	S1B/SZN		SC
<i>Empidonax flaviventris</i>	Yellow-bellied Flycatcher	G5	S1B/SZN		SC
<i>Eudocimus albus</i>	White Ibis	G5	S1B/SAN		
<i>Falco peregrinus</i>	Peregrine Falcon	G4	S1B/S2N		LT
<i>Fulica americana</i>	American Coot	G5	S1B/S5N		
<i>Gallinula chloropus</i>	Common Moorhen	G5	S1B/S1N		SC
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G4	S2S3B/S3N	LT/PDL	LT
<i>Himantopus mexicanus</i>	Black-necked Stilt	G5	S1B		
<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4	S2B/S3N		LT
<i>Laterallus jamaicensis</i>	Black Rail	G4	S2B/S2N		
<i>Limnothlypis swainsonii</i>	Swainson's Warbler	G4	S2B/SZN		SC
<i>Loxia curvirostra</i>	Red Crossbill	G5	S1B/SZN		SC
<i>Melospiza georgiana</i>	Swamp Sparrow	G5	S1B/S4S5N		
<i>Mergus merganser</i>	Common Merganser	G5	S1B/S4N		
<i>Nyctanassa violacea</i> = <i>Nycticorax violaceus</i>	Yellow-crowned Night-heron	G5	S2S3B/S3N		SC
<i>Oporornis philadelphus</i>	Mourning Warbler	G5	S1B/SZN		SC
<i>Pelecanus occidentalis</i>	Brown Pelican	G4	S1B/S3N		SC
<i>Picoides borealis</i>	Red-cockaded Woodpecker	G3	S1	LE	LE
<i>Plegadis falcinellus</i>	Glossy Ibis	G5	S2B/S1N		SC
<i>Podilymbus podiceps</i>	Pied-billed Grebe	G5	S1S2B/S3N		
<i>Porzana carolina</i>	Sora	G5	S1B/S2N		

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BIRDS (continued)					
<i>Rallus elegans</i>	King Rail	G4G5	S2B/S3N		
<i>Rallus limicola</i>	Virginia Rail	G5	S2B/S3N		
<i>Regulus satrapa</i>	Golden-crowned Kinglet	G5	S2B/S5N		SC
<i>Rynchops niger</i>	Black Skimmer	G5	S2B/S1N		
<i>Seiurus noveboracensis</i>	Northern Waterthrush	G5	S1B/SZN		
<i>Sitta canadensis</i>	Red-breasted Nuthatch	G5	S2B/S4N		SC
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	G5	S1B/S4N		
<i>Sterna antillarum</i>	Least Tern	G4	S2B/SZN		SC
<i>Sterna caspia</i>	Caspian Tern	G5	S1B/S2N		SC
<i>Sterna dougallii</i>	Roseate Tern	G4	SHB/SZN	LE	LE
<i>Sterna maxima</i>	Royal Tern	G5	S2B/SZN		
<i>Sterna nilotica</i>	Gull-billed Tern	G5	S2B/SZN		LT
<i>Sterna sandvicensis</i>	Sandwich Tern	G5	S1B/SZN		SC
<i>Thryomanes bewickii altus</i>	Appalachian Bewick's Wren	G5T2Q	S1B/SZN		LE
<i>Troglodytes troglodytes</i>	Winter Wren	G5	S2B/S4N		SC
MAMMALS					
<i>Corynorhinus rafinesquii macrotis</i> = <i>Plecotus rafinesquii macrotis</i>	Eastern big-eared bat	G3G4	S2		LE
<i>Corynorhinus townsendii virginianus</i> = <i>Plecotus townsendii virginianus</i>	Virginia big-eared bat	G4T2	S1	LE	LE
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	G5T1	S1	LE	LE
<i>Glaucomys sabrinus fuscus</i>	Virginia northern flying squirrel	G5T2	S1	LE	LE
<i>Lepus americanus</i>	Snowshoe hare	G5	S1		LE
<i>Martes pennanti</i>	Fisher	G5	S1		
<i>Microtus chrotorrhinus carolinensis</i>	Southern rock vole	G4T3	S1		LE
<i>Myotis austroriparius</i>	Southeastern myotis (bat)	G3G4	S1S2		
<i>Myotis grisescens</i>	Gray myotis (bat)	G3	S1	LE	LE
<i>Myotis leibii</i>	Eastern small-footed myotis (bat)	G3	S1		
<i>Myotis sodalis</i>	Indiana myotis (bat)	G2	S1	LE	LE
<i>Puma concolor couguar</i> = <i>Felis concolor couguar</i>	Eastern cougar	G5TH	SX	LE	LE
<i>Sciurus niger cinereus</i>	Delmarva fox squirrel	G5T3	S1	LE	LE
<i>Sorex longirostris fisheri</i>	Dismal Swamp southeastern shrew	G5T4	S2		LT
<i>Sorex palustris punctulatus</i>	Southern water shrew	G5T3	S1S2		LE
<i>Sylvilagus floridanus hitchensi</i>	Smith Island cottontail	G5THQ	SH		

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INVERTEBRATES					
TURBELLARIA (FLATWORMS)					
<i>Geocentrophora cavernicola</i>	A cave planarian	G3G4	S1		
<i>Procotyla typhlops</i>	A groundwater planarian	G1G2	S1S2		
<i>Sphaloplana chandleri</i>	Chandler's planarian	G1G3	S1		
<i>Sphaloplana consimilis</i>	Powell Valley planarian	G2G3	S1		
<i>Sphaloplana holsingeri</i>	Holsinger's groundwater planarian	GH	SH		
<i>Sphaloplana hypogea</i>	A groundwater planarian	G1G2	S1S2		
<i>Sphaloplana subtilis</i>	Bigger's groundwater planarian	GH	SH		
<i>Sphaloplana virginiana</i>	Rockbridge County cave planarian	G1	S1		
GASTROPODA (SNAILS)					
<i>Anguispira jessica</i>	Mountain disc	G3G4	S1		
= <i>Anguispira alternata jessica</i>					
<i>Catinella hubrichti</i>	Snowhill ambersnail	G3	S1S3		
<i>Discus nigrimontanus</i>	Black Mountain disc	G4	S1S3		
<i>Euchemotrema leai</i>	Lowland pillsnail	G5	S1S3		
= <i>Stenotrema leai alicia</i>					
<i>Fontigens bottimeri</i>	Appalachian springsnail	G2	S1S2		
<i>Fontigens morrisoni</i>	Virginia springsnail	G1	S1		
<i>Fumonelix christyi</i>	Glossy covert	G3	S1S3		
= <i>Mesodon christyi</i>					
<i>Fumonelix wheatleyi clingmanicus</i>	Clingman covert	G4T3T4	S1S2		
= <i>Mesodon clingmanicus</i>					
<i>Gastrocopta clappi</i>	Bluegrass snaggletooth	G3G5	S1S2		
= <i>Gastrocopta armifera clappi</i>					
<i>Gastrocopta pellucida</i>	Slim snaggletooth	G4G5	S1S3		
<i>Gastrodonta fonticula</i>	Appalachia bellytooth	G3G4	S1S3		
= <i>Gastrocopta interna fonticula</i>					
<i>Glyphyalinia picea</i>	Rust glyph	G3	S1S3		
<i>Glyphyalinia praecox</i>	Brilliant glyph	G4	S1S3		
<i>Glyphyalinia raderi</i>	Maryland glyph	G2	S1S2		SC
<i>Glyphyalinia sculptilis</i>	Suburb glyph	G4	S1		
<i>Glyphyalinia virginica</i>	Depressed glyph	G3	S2S3		
<i>Helicodiscus diadema</i>	Shaggy coil	G1	S1		LE
<i>Helicodiscus lirellus</i>	Rubble coil	G1	S1		LE
<i>Helicodiscus multidens</i>	Twilight coil	G2	S2		
<i>Helicodiscus shimeki</i>	Temperate coil	G4	S1		
<i>Helicodiscus triodus</i>	Talus coil	G2	S1S2		
<i>Holsingeria unthanksensis</i>	Unthanks Cave Snail	G1	S1		LE
<i>Holsingeria</i> sp 1	Skyline Caverns snail	G1Q	S1		
<i>Inflectarius kalmianus</i>	Brown globelet	G3	S1S3		
= <i>Mesodon kalmianus</i>					
<i>Io fluvialis</i>	Spiny riversnail	G2	S2		LT
<i>Leptoxis praerosa</i>	Onyx rocksnail	G5	S1S3		
= <i>Anculosa subglobosa</i>					
<i>Megapallifera wetherbyi</i>	Blotchy mantleslug	G2G3	S1?		
<i>Mesodon andrewsae</i>	Balsam globe	G3	S1		
<i>Mesodon elevatus</i>	Proud globe	G5	S2		
<i>Mesomphix subplanus</i>	Flat button	G3	S2		

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GASTROPODA (continued)					
<i>Millerelix plicata</i>	Cumberland liptooth	G3G4	S1S3		
= <i>Polygyra plicata</i>					
<i>Oxyloma subeffusum</i>	Chesapeake ambersnail	G3	S1		
<i>Pallifera hemphilli</i>	Black mantleslug	G3	S1		
<i>Pallifera varia</i>	Variable mantleslug	G2G4	S2?		
<i>Paravitrea blarina</i>	Shrew supercoil	G2	S1		
<i>Paravitrea calcicola</i>	Pearl supercoil	G1	SR		
<i>Paravitrea dentilla</i>	Comb supercoil	G1	S1		
<i>Paravitrea hera</i>	Spirit supercoil	G1	S1		LE
<i>Paravitrea mira</i>	Funnel supercoil	G2	S2		
<i>Paravitrea placentula</i>	Glossy supercoil	G3	S1S3		
<i>Paravitrea pontis</i>	Natural Bridge supercoil	G3	S2		
<i>Paravitrea reesei</i>	Round supercoil	G2	S2		
<i>Paravitrea septadens</i>	Brown supercoil	G1	S1		LT
<i>Paravitrea seradens</i>	Barred supercoil	G3	S1S3		
<i>Paravitrea subtilis</i>	Slender supercoil	G2	S1S2		
<i>Patera panselenus</i>	Virginia bladetooth	G2	S2		
= <i>Mesodon panselenus</i>					
<i>Polygyriscus virginianus</i>	Virginia fringed mountain snail	G1	S1	LE	LE
<i>Pomatiopsis cincinnatensis</i>	Brown walker	G4	S2		
<i>Pupilla muscorum</i>	Widespread column	G5	S1		
<i>Somatogyrus virginicus</i>	Panhandle pebblesnail	G1G2	S1S2		
<i>Stagnicola neopalustris</i>	Piedmont pondsniail	GH	SH		
<i>Stenotrema altispira</i>	Highland slitmouth	G2	S1		
<i>Stenotrema pilula</i>	Pygmy slitmouth	G3G4	S1		
<i>Stenotrema spinosum</i>	Carinate slitmouth	G3G4	S2		
<i>Striatura exigua</i>	Ribbed striate	G4G5	S2		
<i>Striatura milium</i>	Fine-ribbed striate	G4	S1S3		
<i>Triodopsis anteridion</i>	Carter threetooth	G2G3	S2S3		
<i>Triodopsis messana</i>	Pinhole threetooth	G4	S1S3		
<i>Triodopsis pendula</i>	Hanging Rock threetooth	G3	S1S3		
<i>Triodopsis picea</i>	Spruce Knob threetooth	G3	S1		
<i>Vallonia parvula</i>	Trumpet vallonia	G4	S1		
<i>Ventridens coelaxis</i>	Bidentate dome	G3	S2		
<i>Ventridens decussatus</i>	Crossed dome	G2G3	S1		
<i>Ventridens lawae</i>	Rounded dome	G3G4	S1S3		
<i>Ventridens pilsbryi</i>	Yellow dome	G4	S2?		
<i>Vertigo bollesiana</i>	Delicate vertigo	G3	S1S3		
<i>Vertigo clappi</i>	Cupped vertigo	G1G2	S1S2		
<i>Vertigo oralis</i>	Palmetto vertigo	G5	S1S3		
<i>Vertigo teskeyae</i>	Swamp vertigo	G4	S1S3		
<i>Vertigo ventricosa</i>	Five-tooth vertigo	G3G4	S1S3		
<i>Vitrinizonites latissimus</i>	Glassy grapeskin	G4	S2?		

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BIVALVIA (MUSSELS & CLAMS)					
Mussels					
<i>Alasmidonta heterodon</i>	Dwarf wedgemussel	G1G2	S1	LE	LE
<i>Alasmidonta marginata</i>	Elktoe	G4	S2	SC	
<i>Alasmidonta varicosa</i>	Brook floater	G3	S1	LE	
<i>Alasmidonta viridis</i> = <i>Alasmidonta minor</i>	Slippershell mussel	G4G5	S1	LE	
<i>Cumberlandia monodonta</i>	Spectacle case	G2G3	S1	LE	LE
<i>Cyprogenia stegaria</i> = <i>Cyprogenia irrorata</i>	Fanshell	G1	S1	LE	LE
<i>Dromus dromas</i>	Dromedary pearlymussel	G1	S1	LE	LE
<i>Elliptio crassidens</i>	Elephant ear	G5	S1	LE	
<i>Elliptio lanceolata</i>	Yellow lance	G2G3	S2S3	SC	
<i>Elliptio roanokensis</i>	Roanoke slabshell	G2G3	S1	SC	
<i>Epioblasma brevidens</i>	Cumberland combshell	G1	S1	LE	LE
<i>Epioblasma capsaeformis</i>	Oyster mussel	G1	S1	LE	LE
<i>Epioblasma florentina walkeri</i>	Tan riffleshell	G1T1	S1	LE	LE
<i>Epioblasma torulosa gubernaculum</i>	Green-blossom pearlymussel	G2TX	SX	LE	LE
<i>Epioblasma triquetra</i>	Snuffbox	G3	S1	LE	
<i>Fusconaia barnesiana</i>	Tennessee pigtoe	G2G3	S2S3	SC	
<i>Fusconaia cor</i> = <i>Fusconaia edgariana</i>	Shiny pigtoe	G1	S1	LE	LE
<i>Fusconaia cuneolus</i>	Fine-rayed pigtoe	G1	S1	LE	LE
<i>Fusconaia masoni</i>	Atlantic pigtoe	G2	S2	LT	
<i>Hemistena lata</i> = <i>Lastena lata</i>	Cracking pearlymussel	G1	S1	LE	LE
<i>Lampsilis abrupta</i> = <i>Lampsilis orbicularis</i>	Pink mucket	G2	SX	LE	LE
<i>Lampsilis cariosa</i>	Yellow lampmussel	G3G4	S2	SC	
<i>Lampsilis radiata</i>	Eastern lampmussel	G5	S2	SC	
<i>Lasmigona holstonia</i>	Tennessee heelsplitter	G3	S1	LE	
<i>Lasmigona subviridis</i>	Green floater	G3	S2	SC	
<i>Lemiox rimosus</i> = <i>Conradilla caelata</i>	Birdwing pearlymussel	G1	S1	LE	LE
<i>Leptodea fragilis</i>	Fragile papershell	G5	S2	LT	
<i>Lexingtonia dolabelloides</i>	Slabside pearlymussel	G2	S2	C	LT
<i>Lexingtonia subplana</i>	Virginia pigtoe	G1Q	S1		
<i>Ligumia recta</i> = <i>Ligumia recta latissima</i>	Black sandshell	G5	S2		LT
<i>Pegias fabula</i>	Little-winged pearlymussel	G1	S1	LE	LE
<i>Plethobasus cyphyus</i>	Sheepnose	G3	S1	LT	
<i>Pleurobema collina</i>	James spiny mussel	G1	S1	LE	LE
<i>Pleurobema cordatum</i>	Ohio pigtoe	G3	S1		LE
<i>Pleurobema oviforme</i> = <i>Pleurobema maculatum</i>	Tennessee clubshell	G3	S2S3		
<i>Pleurobema plenum</i>	Rough pigtoe	G1	SH	LE	LE
<i>Pleurobema rubrum</i> = <i>Pleurobema pyramidatum</i>	Pyramid pigtoe	G2	S1		LE
<i>Ptychobranchus subtentum</i>	Fluted Kidneyshell	G2G3	S2	C	

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Mussels (continued)					
<i>Quadrula cylindrica strigillata</i>	Rough rabbits foot	G3T2	S2	LE	LE
<i>Quadrula intermedia</i>	Cumberland monkeyface	G1	S1	LE	LE
<i>Quadrula pustulosa</i>	Pimple back	G5	S2		LT
<i>Quadrula sparsa</i>	Appalachian monkeyface	G1	S1	LE	LE
<i>Toxolasma lividus</i> = <i>Carunculina lividus</i> , <i>Carunculina glans</i>	Purple liliput	G2	S1		LE
<i>Truncilla truncata</i>	Deertoe	G5	S1		LE
<i>Villosa fabalis</i>	Rayed bean	G1G2	SX		
<i>Villosa perpurpurea</i>	Purple bean	G1	S1	LE	LE
<i>Villosa trabalis</i>	Cumberland bean	G1	SX	LE	LE
Clams					
<i>Pisidium equilaterale</i>	Round peaclam	G5	S2		
ANNELIDA (SEGMENTED WORMS)					
<i>Spelaedrilus multiporus</i>	A cave lumbriculid worm	G1G2	S1		
<i>Stylodrilus beattiei</i>	A cave lumbriculid worm	G2G3	S1		
ARACHNIDA (SPIDERS, PSEUDOSCORPIONS & RELATIVES)					
Spiders					
<i>Amaurobius borealis</i>	An amauobiid spider	G4	S1S3		
<i>Anahita punctulata</i>	Southeastern wandering spider	G4	S1S3		
<i>Anthrobia mammouthia</i> = <i>Anthrobia monmouthia</i>	A cave spider	G3G4	S1		
<i>Antrodiaetus robustus</i>	Robust trapdoor spider	G3?	S2		
<i>Barronopsis jeffersi</i>	A funnel-web spider	G3	S1S3		
<i>Bathyphantes weyeri</i>	A cave spider	G3G4	S1		
<i>Castianeira trilineata</i>	A two-clawed hunting spider	G4?	S1S3		
<i>Clubiona spiralis</i>	A two-clawed hunting spider	G4	S1S3		
<i>Drassyllus louisianus</i>	A gnaphosid spider	G4?	S1S3		
<i>Hypochilus pococki</i>	Pocock's lampshade-web spider	G4G5	S2		
<i>Hypochilus thorelli</i>	Thorell's lampshade-web spider	G4	S1		
<i>Islandiana muma</i>	A cave spider	G2G3	S1		
<i>Nesticus holsingeri</i>	Holsinger's cave spider	G2G3	S1S2		
<i>Nesticus mimus</i>	A cave spider	G2	S1		
<i>Nesticus paynei</i>	A cave spider	G2G3	S1		
<i>Nesticus tennesseensis</i>	A cave spider	G2G4	S2		
<i>Pisaurina dubia</i>	A nursery-web spider	G4	S1S3		
<i>Xysticus emertoni</i>	Emerton's crab spider	G5	S1S3		
Mites					
<i>Foveacheles paralleloseta</i>	A cave mite	G1	S1		
<i>Poecilophysis extraneostella</i>	A cave mite	G2?	S1		
<i>Poecilophysis weyerensis</i>	A cave mite	G3?	S1		
<i>Rhagidia varia</i>	A cave mite	G3	S2?		

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ARACHNIDA (continued)					
Pseudoscorpions					
<i>Apochthonius coecus</i>	A cave pseudoscorpion	G1	S1		
<i>Apochthonius holsingeri</i>	A cave pseudoscorpion	G1G2	S1		
<i>Chitrella superba</i>	A cave pseudoscorpion	G1	S1		
<i>Chitrella</i> sp 1	A cave pseudoscorpion	G1	S1		
<i>Kleptochthonius anophthalmus</i>	A cave pseudoscorpion	G1	S1		
<i>Kleptochthonius binoculatus</i>	A cave pseudoscorpion	G1	S1		
<i>Kleptochthonius gertschi</i>	Gertsch's cave pseudoscorpion	G1	S1		
<i>Kleptochthonius lutzi</i>	Lutz's cave pseudoscorpion	G1	S1		
<i>Kleptochthonius polychaetus</i>	Shenandoah pseudoscorpion	G1G3	S1S3		
<i>Kleptochthonius proximosetus</i>	A cave pseudoscorpion	G1	S1		
<i>Kleptochthonius regulus</i>	A cave pseudoscorpion	G1	S1		
<i>Kleptochthonius similis</i>	A cave pseudoscorpion	G1	S1		
<i>Kleptochthonius</i> sp 1 = <i>Kleptochthonius</i> sp B	A cave pseudoscorpion	G1	S1		
<i>Microcreagris valentinei</i>	Valentine's cave pseudoscorpion	G1G3	S1		
<i>Mundochthonius holsingeri</i>	A cave pseudoscorpion	G1	S1		
Scorpions					
<i>Vaejovis carolinianus</i>	Carolina scorpion	G5	S1		

CRUSTACEA (AMPHIPODS, ISOPODS & DECAPODS)

Amphipods					
<i>Bactrurus angulus</i>	Cumberland Gap cave amphipod	G1	S1		
<i>Crangonyx gracilis</i>	Big white amphipod	G4	S1S3		
<i>Crangonyx</i> sp 3	Bland County amphipod	G1?	S1?		
<i>Crangonyx</i> sp 5	Lancaster County amphipod	G1?	S1?		
<i>Stygobromus abditus</i>	James Cave amphipod	G2	S2		
<i>Stygobromus baroodyi</i>	Rockbridge County cave amphipod	G2	S1S2		
<i>Stygobromus biggersi</i>	Bigger's cave amphipod	G2G4	S1S2		
<i>Stygobromus conradi</i>	Burnsville Cove cave amphipod	G1G3	S1S2		
<i>Stygobromus cumberlandus</i>	Cumberland cave amphipod	G2G3	S1S2		
<i>Stygobromus ephemerus</i>	Ephemeral cave amphipod	G1	S1		SC
<i>Stygobromus estesi</i>	Craig County cave amphipod	G1G2	S1S2		
<i>Stygobromus fergusoni</i>	Montgomery County cave amphipod	G1G2	S1		
<i>Stygobromus finleyi</i>	Finley's cave amphipod	G1G3	S1		
<i>Stygobromus gracilipes</i>	Shenandoah Valley cave amphipod	G2G4	S2S3		SC
<i>Stygobromus hoffmani</i>	Alleghany County cave amphipod	G1	S1		
<i>Stygobromus interitus</i>	New Castle Murder Hole amphipod	G1	S1		
<i>Stygobromus kenki</i>	Rock Creek groundwater amphipod	G1G3	SH		
<i>Stygobromus leensis</i>	Lee County cave amphipod	G1	S1		
<i>Stygobromus morrisoni</i>	Morrison's cave amphipod	G2G3	S1S2		SC
<i>Stygobromus mundus</i>	Bath County cave amphipod	G2G3	S1S2		SC
<i>Stygobromus obrutus</i>	Pittsylvania well amphipod	G1	SH		
<i>Stygobromus phreaticus</i>	Northern Virginia well amphipod	G1	S1		
<i>Stygobromus pizzinii</i>	Pizzini's amphipod	G2G4	S1S2		SC
<i>Stygobromus pseudospinosus</i>	Luray Caverns amphipod	G1	S1		

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Amphipods (continued)					
<i>Stygobromus stegerorum</i>	Madison Cave amphipod	G1	S1		LT
<i>Stygobromus</i> sp 7	Sherando spinosoid amphipod	G2	S2		
<i>Stygobromus</i> sp 8	A groundwater amphipod	G2G3	S2S3		
<i>Stygobromus</i> sp 9	A cave amphipod (Shenandoah Co.)	G1	S1		
<i>Stygobromus</i> sp 10	A cave amphipod (Botetourt Co.)	G1	S1		
<i>Stygobromus</i> sp 11	A cave amphipod (Nelson Co.)	G1	S1		
<i>Stygobromus</i> sp 12	A cave amphipod (Rockbridge Co.)	G1	S1		
<i>Stygobromus</i> sp 15	A groundwater amphipod	G1	S1		
<i>Stygobromus</i> sp 16	Helsley's Cave amphipod	G1	S1		
<i>Stygobromus</i> sp 17	Massanutten spring amphipod	G2	S2		
<i>Stygobromus</i> sp 18	Big Levels spring amphipod	G1?	S1?		
<i>Stygobromus</i> sp 19	A cave amphipod (Scott Co.)	G1	S1		
<i>Stygobromus</i> sp 20	A cave amphipod (Bath, Highland Co.)	G1	S1		
<i>Stygobromus</i> sp 21	Rappahannock spring amphipod	G1G2	S1S2		
<i>Stygobromus</i> sp 23	Shenandoah Mountain spring amphipod	G1?	S1?		
Isopods					
<i>Amerigoniscus henroti</i>	Powell Valley terrestrial cave isopod	G1G2	S1S2		
<i>Antrolana lira</i>	Madison Cave isopod	G2	S2	LT	LT
<i>Caecidotea attenuatus</i>	Dismal Swamp isopod	G1?	S1?		
<i>Caecidotea bowmani</i>	Natural Bridge cave isopod	G1	S1		
<i>Caecidotea cumberlandensis</i>	Cumberland Gap cave isopod	G1	S1		
<i>Caecidotea henroti</i>	Henrot's cave isopod	G2G3	S1S2		
<i>Caecidotea holssingeri</i>	Greenbrier Valley cave isopod	G3	S1		
<i>Caecidotea incurva</i>	Incurved cave isopod	G2G3	S1S2		
<i>Caecidotea phreatica</i>	Phreatic isopod	G1G2	S1		
<i>Caecidotea pricei</i>	Price's cave isopod	G3G4	S2S3		
<i>Caecidotea richardsonae</i>	Tennessee Valley cave isopod	G3G5	S2		
<i>Caecidotea vandeli</i>	Vandel's cave isopod	G2G3	S1S2		
<i>Ligidium elrodii leensis</i>	Lee County terrestrial cave isopod	G4G5T1T2	S1S2		
<i>Ligidium elrodii scottensis</i>	Scott County terrestrial cave isopod	G4G5T1T2	S1S2		
<i>Lirceus culveri</i>	Rye Cove isopod	G1	S1	LE	SC
<i>Lirceus usdagalun</i>	Lee County cave isopod	G1	S1	LE	LE
<i>Miktoniscus racovitzai</i>	Racovitz'a's terrestrial cave isopod	G3G4	S2		
Decapods					
<i>Cambarus buntingi</i>	Bunting's crayfish	G4	S2		
<i>Cambarus jezerinaci</i>	Powell River crayfish	G1G2	S1S2		
<i>Cambarus monongalensis</i>	Monongahela crayfish	G5	S1?		
<i>Cambarus parvoculus</i>	A crayfish	G4	S2?		
<i>Cambarus sciotensis</i>	Scioto crayfish	G5	S2S3		
<i>Cambarus veteranus</i>	A crayfish	G3G4	S1S2		
<i>Macrobrachium ohioe</i>	Ohio river shrimp	G4	S1		
<i>Orconectes virginianus</i>	Chowanoke crayfish	G3	S2S3		

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DIPLOPODA (MILLIPEDES)					
<i>Abacion tesselatum</i>	A millipede	G5	S2		
<i>Aniulus orientalis</i>	A millipede	G2	S1		
<i>Aniulus</i> sp 1	A millipede (Elm Hill)	G?	S1		
<i>Auturus erythropygus</i>	A millipede	G3	S1		
<i>Boraria infesta</i>	A millipede	G4	S2		
<i>Brachoria cedra</i>	Cedar millipede	G1G2	S1		
<i>Brachoria dentata</i>	A millipede	G1	S1		
<i>Brachoria falcifera</i>	Big Cedar Creek millipede	G1	S1		
<i>Brachoria hoffmani</i>	Hoffman's xystodesmid millipede	G2	S2		
<i>Brachoria insolita</i>	A millipede	G1	S1		
<i>Brachoria laminata</i>	Keeton's millipede	G1	S1		
<i>Brachoria mendota</i>	Collinwood millipede	G1	S1		
<i>Brachoria separanda calcaria</i>	A millipede	G2T?	S2		
<i>Brachoria separanda hamata</i>	A millipede	G2T?	S2		
<i>Brachoria separanda versicolor</i>	A millipede	G2T?	S2		
<i>Brachoria turneri</i>	Turner's millipede	G1	S1		
<i>Brachoria</i> sp 1	Powell Mountain millipede sp 1	G1?	S1?		
<i>Brachoria</i> sp 2	Powell Mountain millipede sp 2	G1?	S1?		
<i>Buotus carolinus</i>	A millipede	G1	S1		
<i>Chaetaspis albus</i>	A millipede	G4	S2		
<i>Cherokia georgiana latassa</i>	A millipede	G4T?	S1		
<i>Cleidogona fidelitor</i>	Faithful millipede	G1	S1		
<i>Cleidogona hoffmani</i>	Hoffman's cleidogonid millipede	G2	S2		
<i>Cleidogona lachesis</i>	A millipede	G2	S1		
<i>Cleidogona medialis</i>	Blowing Rock millipede	G1	S1		
<i>Conotyla aeto</i>	Aeto millipede	G1	S1		
<i>Conotyla celeno</i>	Celeno millipede	G1	S1		
<i>Conotyla melinda</i>	Melinda millipede	G2	S2		
<i>Conotyla venetia</i>	Venetia millipede	G2	S2		
<i>Conotyla</i> sp 1	A millipede (Burkes Garden)	G1	S1		
<i>Desmonus earlei</i>	A millipede	G5	S1		
<i>Dixioria brooksi</i>	Brooks millipede	G1	S1		
<i>Dixioria fowleri</i>	A millipede	G2	S2		
<i>Dixioria pela coronata</i> = <i>Dixioria coronata</i>	A millipede	G?T2	S2		
<i>Euryurus leachi fraternus</i>	A millipede	G4T?	S1		
<i>Gyalostethus monticolens</i>	A millipede	G4	S2		
<i>Nannaria conservata</i>	Duke Forest xystodesmid millipede	G1	S1		
<i>Nannaria ericacea</i>	McGraw Gap xystodesmid millipede	G2	S2		
<i>Nannaria laminata</i>	Smith Creek xystodesmid millipede	G1	S1		
<i>Nannaria shenandoah</i>	Shenandoah Mountain xystodesmid millipede	G1	S1		
<i>Nannaria simplex</i>	A millipede	G1	S1		
<i>Nannaria</i> sp 1	Roaring Branch Nannaria millipede	G1?	S1?		
<i>Okeanobates americanus</i>	A millipede	G4	S1		
<i>Onomeris underwoodi</i>	A millipede	G5	S1		
<i>Ornisobates nigrior</i>	A millipede	G4	S1		
<i>Petasertipes rosalbus</i>	A millipede	G5	S2		
<i>Petasertipes strictus</i>	A millipede	G5	S1		
<i>Pseudopolydesmus paludicolous</i>	A millipede	G3?	S2		
<i>Pseudotremia alesto</i>	A millipede	G1	S1		
<i>Pseudotremia armesi</i>	A millipede	G2	S2		
<i>Pseudotremia cavernarum</i>	Ellett Valley Pseudotremia millipede	G2G4	S1		LT

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DIPLOPODA (continued)					
<i>Pseudotremia momus</i>	A millipede	G2	S2		
<i>Pseudotremia princeps</i>	South Branch Valley cave millipede	G1	S1		
<i>Pseudotremia sublevis</i>	A millipede	G1	S1		
<i>Pseudotremia tuberculata</i>	A millipede	G2	S1S2		
<i>Pseudotremia</i> sp 2	Roaring Branch Pseudotremia millipede	G1?	S1?		
<i>Pseudotremia</i> sp 3	A cave millipede	G1	S1		
<i>Rudiloria trimaculata tortua</i>	A millipede	G5T2	S2		
<i>Semionellus placidus</i>	A millipede	G3	S2		
<i>Sigmoria whiteheadi</i>	Laurel Creek xystodesmid millipede	G1	S1		LT
<i>Striaria causeyae</i>	A millipede	G1	S1		
<i>Striaria columbiana</i>	A millipede	G2	S2		
<i>Striaria granulosa</i>	A millipede	G2	S1		
<i>Striaria</i> sp 1	A millipede	G1	S1		
<i>Thalassiosobates littoralis</i>	A millipede	G5	S1		
<i>Trichomeris sinuata</i>	A millipede	G5	S1		
<i>Trichopetalum dux</i>	A millipede	G1	S1		
<i>Trichopetalum lunatum</i>	A millipede	G5	S2		
<i>Trichopetalum packardi</i>	Packard's blind cave millipede	G4	S2		
<i>Trichopetalum weyeriensis</i>	Grand Caverns blind cave millipede	G3G4	S2		
<i>Trichopetalum whitei</i>	Luray Caverns blind cave millipede	G3G4	S2		
<i>Uroblaniulus canadensis</i>	A millipede	G5	S2		
<i>Uroblaniulus jerseyi</i>	A millipede	G3	S2		
<i>Uroblaniulus</i> sp 1	A millipede (Burkes Garden)	G?	S1		
<i>Virgoiulus minutus</i>	A millipede	G5	S2		
CHILOPODA (CENTIPEDES)					
<i>Escaryus cryptorobius</i>	Montane centipede	G2	S2		
<i>Escaryus ethopus</i>	A centipede	G?	S1S2		
<i>Escaryus orestes</i>	Whitetop Mountain centipede	G1G2	S1S2		
<i>Nampabius turbator</i>	A cave centipede	G1G2	S1		
COLLEMBOLA (SPRINGTAILS)					
<i>Arrhopalites caedus</i>	A cave springtail	G1G2	S1		
<i>Arrhopalites carolynae</i>	A cave springtail	G2G3	S1		
<i>Arrhopalites clarus</i>	A cave springtail	G2G4	S1		
<i>Arrhopalites commorus</i>	A cave springtail	G1G2	S1		
<i>Arrhopalites lacuna</i>	A cave springtail	G1G2	S1S2		
<i>Arrhopalites marshalli</i>	A cave springtail	G3	S2		
<i>Arrhopalites pavo</i>	A cave springtail	G1G2	S1		
<i>Arrhopalites sacer</i>	A cave springtail	G1G2	S1		
<i>Arrhopalites silvus</i>	A cave springtail	G1G2	S1		
<i>Oncopodura hubbardi</i>	A cave springtail	G1	S1		
<i>Pseudosinella bona</i>	A cave springtail	G1G2	S1S2		
<i>Pseudosinella erhwon</i>	A cave springtail	G1	S1		
<i>Pseudosinella extra</i>	A cave springtail	G1	S1		
<i>Pseudosinella gisini virginia</i>	A cave springtail	G3G4T1	S1		
<i>Pseudosinella granda</i>	A cave springtail	G3	S2		
<i>Pseudosinella hirsuta</i>	A cave springtail	G2G4	S1		
<i>Schaefferia hubbardi</i>	A cave springtail	G3	S2		
<i>Typhlogastrura valentini</i>	A cave springtail	G1	S1		

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DIPLURA (DIPLURANS)					
<i>Litocampa cookei</i>	Cooke's cave dipluran	G4G5	S2		
<i>Litocampa pucketti</i>	Puckett's cave dipluran	G2	S2		
<i>Litocampa</i> sp 1	A cave dipluran (Salamander Cave)	G1	S1		
<i>Litocampa</i> sp 3	A cave dipluran	G2	S2		
<i>Litocampa</i> sp 4	A cave dipluran	G2	S1S2		
EPHEMEROPTERA (MAYFLIES)					
<i>Ameletus cryptostimulus</i>	Allegheny mayfly	G4	S1S3		
<i>Ameletus tarteri</i>	Tarter's Ameletus mayfly	G1	S1		
<i>Baetisca rubescens</i>	A mayfly	G2	S1		
<i>Barbaetis benfieldi</i>	Benfield's bearded small minnow mayfly	G2	S1		
<i>Ephemerella berneri</i>	Berner's Ephemerella mayfly	G3	S1S3		
<i>Ephemerella inconstans</i>	A mayfly	G3	S1S3		
<i>Habrophlebiodes celeteria</i>	A mayfly	G2	S1?		
<i>Isonychia arida</i>	A mayfly	G5	S2		
<i>Isonychia georgiae</i>	Georgia Isonychia mayfly	G3	S1S3		
<i>Isonychia hoffmani</i>	Hoffman's Isonychia mayfly	G1	S1		
<i>Isonychia serrata</i>	A mayfly	G4	S1S3		
<i>Isonychia tusculanensis</i>	A mayfly	G3	S2		
<i>Leptophlebia johnsoni</i>	Johnson's pronggill mayfly	G4	S1		
<i>Paraleptophlebia assimilis</i>	A mayfly	G3	S1S3		
<i>Paraleptophlebia jeanae</i>	A mayfly	G3	S1S3		
<i>Pseudiron centralis</i>	White sand-river mayfly	G5	S1		
<i>Rhithrogena anomala</i>	A mayfly	G2	S1?		
<i>Siphloplecton costalense</i>	Spieth's great speckled olive mayfly	G2	SH		
ODONATA (DAMSELFLIES & DRAGONFLIES)					
Damselflies					
<i>Calopteryx aequabilis</i>	River jewelwing	G5	S2?		
<i>Calopteryx amata</i>	Superb jewelwing	G4	S1		
<i>Calopteryx angustipennis</i>	Appalachian jewelwing	G4	S2		
<i>Enallagma cyathigerum</i>	Northern bluet	G5	S1		
<i>Enallagma dubium</i>	Burgundy bluet	G5	S2		
<i>Enallagma ebrium</i>	Marsh bluet	G5	S1		
<i>Enallagma hageni</i>	Hagen's bluet	G5	S2		
<i>Enallagma pallidum</i>	Pale bluet	G4	S1		
<i>Enallagma weewa</i>	Blackwater bluet	G5	S2		
<i>Lestes disjunctus disjunctus</i>	Northern common spreadwing	G5T5	S1S2		
<i>Lestes dryas</i>	Emerald spreadwing	G5	S1		
<i>Lestes vidua</i>	Carolina spreadwing	G5	SH		
<i>Nehalennia gracilis</i>	Sphagnum sprite	G5	S2		
<i>Nehalennia integricollis</i>	Southern sprite	G5	S2		
<i>Nehalennia irene</i>	Sedge sprite	G5	S1		
Dragonflies					
<i>Aeshna canadensis</i>	Canada darner	G5	S1		
<i>Aeshna constricta</i>	Lance-tipped darner	G5	S1		
<i>Aeshna mutata</i>	Spatterdock darner	G3G4	S2		
<i>Aeshna tuberculifera</i>	Black-tipped darner	G4	S2S3		
<i>Aeshna verticalis</i>	Green-striped darner	G5	S1		

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Dragonflies (continued)					
<i>Aphylla williamsoni</i>	Two-striped forceptail	G5	S1		
<i>Arigomphus furcifer</i>	Lilypad clubtail	G5	SH		
<i>Celithemis martha</i>	Martha's pennant	G4	S2		
<i>Celithemis ornata</i>	Faded pennant	G5	SH		
<i>Cordulegaster diastatops</i>	Delta-spotted spiketail	G5	S1		
<i>Cordulia shurtleffii</i>	American emerald	G5	S2		
<i>Coryphaeschna ingens</i>	Regal darner	G5	S1		
<i>Epitheca canis</i> = <i>Tetragoneuria canis</i>	Beaverpond baskettail	G5	S1		
<i>Epitheca costalis</i> = <i>Tetragoneuria costalis</i>	Stripe-winged baskettail	G4	S2		
<i>Epitheca semiaquea</i> = <i>Tetragoneuria semiaquea</i>	Mantled baskettail	G4	S1		
<i>Epitheca spinosa</i> = <i>Tetragoneuria spinosa</i>	Robust baskettail	G4	S2		
<i>Gomphus abbreviatus</i>	Spine-crowned clubtail	G3G4	S2S3		
<i>Gomphus adelphus</i> = <i>Gomphus brevis</i>	Moustached clubtail	G4	S1		
<i>Gomphus apomyius</i>	Banner clubtail	G4	S1		
<i>Gomphus borealis</i>	Beaverpond clubtail	G4	S1		
<i>Gomphus consanguis</i> = <i>Stenogomphurus consanguis</i>	Cherokee clubtail	G2G3	S2		
<i>Gomphus descriptus</i>	Harpoon clubtail	G4	S1		
<i>Gomphus fraternus</i>	Midland clubtail	G5	S1		
<i>Gomphus parvidens</i>	Piedmont clubtail	G4	S1		
<i>Gomphus quadricolor</i>	Rapids clubtail	G3G4	S1		
<i>Gomphus septima</i>	Septima's clubtail	G2	SR		
<i>Gomphus ventricosus</i>	Skillet clubtail	G3	S1		
<i>Gomphus viridifrons</i>	Green-faced clubtail	G3	S2		
<i>Helocordulia selysi</i>	Selys' sundragon	G4	S2		
<i>Ladona exusta</i> = <i>Libellula exusta</i>	White corporal skimmer	G4	S1		
<i>Ladona julia</i> = <i>Libellula julia</i>	Chalk-fronted corporal skimmer	G5	S1		
<i>Lanthus parvulus</i>	Northern pygmy clubtail	G4	S2		
<i>Leucorrhinia frigida</i>	Frosted whiteface	G5	SH		
<i>Leucorrhinia hudsonica</i>	Hudsonian whiteface	G5	S1		
<i>Leucorrhinia intacta</i>	Dot-tailed whiteface	G5	S2S3		
<i>Leucorrhinia proxima</i>	Red-waisted whiteface	G5	SH		
<i>Macromia alleghaniensis</i>	Allegheny river cruiser	G4	S2		
<i>Macromia margarita</i>	Mountain river cruiser	G3	S1		
<i>Nannothenemis bella</i>	Elfin skimmer	G4	S1		
<i>Neurocordulia virginianensis</i>	Cinnamon shadowdragon	G4	S1		
<i>Neurocordulia yamaskanensis</i>	Stygian shadowdragon	G5	S2		
<i>Ophiogomphus alleghaniensis</i> = <i>Ophiogomphus incurvatus alleghaniensis</i>	Allegheny snaketail	G3Q	S1		
<i>Ophiogomphus aspersus</i>	Brook snaketail	G3G4	S1		
<i>Ophiogomphus carolus</i>	Riffle snaketail	G5	S1		
<i>Ophiogomphus howei</i>	Pygmy snaketail	G3	S1S2		
<i>Ophiogomphus incurvatus</i> = <i>Ophiogomphus incurvatus incurvatus</i>	Appalachian snaketail	G3	S1		
<i>Ophiogomphus mainensis</i>	Maine snaketail	G4	S1		

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Dragonflies (continued)					
<i>Somatochlora elongata</i>	Ski-tailed emerald	G5	S1S2		
<i>Somatochlora filosa</i>	Fine-lined emerald	G5	S2		
<i>Somatochlora georgiana</i>	Coppery emerald	G3G4	S1		
<i>Somatochlora provocans</i>	Treetop emerald	G4	S2		
<i>Somatochlora williamsoni</i>	Williamson's emerald	G5	SH		
<i>Stylurus amnicola</i>	Riverine clubtail	G4	S1		
<i>Stylurus laurae</i>	Laura's clubtail	G4	S2		
<i>Stylurus notatus</i>	Elusive clubtail	G3	S1		
<i>Stylurus scudderi</i>	Zebra clubtail	G4	S1S2		
<i>Sympetrum corruptum</i>	Variegated meadowhawk	G5	S1		
<i>Sympetrum janeae</i>	Jane's meadowhawk	G5	SH		
<i>Sympetrum obtrusum</i>	White-faced meadowhawk	G5	S1		
PLECOPTERA (STONEFLIES)					
<i>Acroneuria flinti</i>	Manassas stonefly	GH	SH		
<i>Acroneuria kosztarabi</i>	Virginia stonefly	G1	S1		
<i>Allocapnia fumosa</i>	Smokies snowfly	G2	S1S2		
<i>Allocapnia illinoensis</i>	Illinois snowfly	G3	S1S3		
<i>Allocapnia simmonsi</i>	Spatulate snowfly	G2	S1S2		
<i>Allocapnia stannardi</i>	Blue Ridge snowfly	G3	S1S3		
<i>Alloperla banksi</i>	Tufted sallfly	G4	S1S3		
<i>Alloperla biserrata</i>	Dusky sallfly	G3	S2S3		
<i>Alloperla idei</i>	Vernal sallfly	G3	S1S3		
<i>Alloperla nanina</i>	Swannanoa sallfly	G4	S1S3		
<i>Alloperla neglecta</i>	Tennessee sallfly	G3	S1S2		
<i>Bolotoperla rossi</i>	Smoky willowfly	G4	S1S3		
<i>Cultus decisus isolatus</i>	Southern springfly	G4T2	S1S2		
<i>Diploperla kanawholensis</i>	Kanawhole springfly	G3	S1S3		
<i>Diploperla morganii</i>	Virginia springfly	G2	S2		
<i>Hansonoperla appalachia</i>	Appalachian stonefly	G3	S1S3		
<i>Isogenoides varians</i>	Rock Island springfly	G3	S1S3		
<i>Isoperla major</i>	Big stripetail stonefly	G1	S1		
<i>Leuctra mitchellensis</i>	Mitchell needlefly	G3	S1S2		
<i>Leuctra monticola</i>	Montane needlefly	G1Q	S1		
<i>Megaleuctra flinti</i>	Shenandoah needlefly	G2	S2		
<i>Megaleuctra williamsae</i>	Smokies needlefly	G2	S2		
<i>Ostrocerca complexa</i>	Notched forestfly	G4	S1S3		
<i>Ostrocerca prolongata</i>	Bent forestfly	G3	S1S3		
<i>Paragnetina ichusa</i>	Widecollar stonefly	G3	S1S3		
<i>Perlesta frisoni</i>	Blue Ridge stonefly	G3	S1S2		
<i>Perlesta teaysia</i>	Teays stonefly	G3	S1S3		
<i>Prostoia hallasi</i>	Swamp forestfly	G3	S1S3		
<i>Pteronarcys comstocki</i>	Spiny salmonfly	G3	S1S3		
<i>Pteronarcys scotti</i>	Carolina salmonfly	G4	S1S3		
<i>Remenus kirchneri</i>	Blue Ridge springfly	G2	S2		
<i>Strophopteryx limata</i>	Newfound willowfly	G3	S1S2		
<i>Sweltsa holstonensis</i>	Holston sallfly	G1	S1		
<i>Sweltsa voshelli</i>	Virginia sallfly	G3	S2		
<i>Taeniopteryx nelsoni</i>	Cryptic willowfly	G1	S1		
<i>Tallaperla cornelia</i>	Southeastern roachfly	G4	S1S3		
<i>Tallaperla lobata</i>	Lobed roachfly	G2	S1S2		
<i>Yugus arinus</i>	Highlands springfly	G3	S1S3		

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ORTHOPTERA (GRASSHOPPERS, KATYDIDS, CRICKETS & RELATIVES)					
<i>Appalachia hebardii</i>	Appalachian grasshopper	GH	SH		
<i>Melanoplus pachycercus</i>	A spur-throat grasshopper	G2G3	S1S3		
<i>Melanoplus</i> sp 55	A spur-throat grasshopper	G1G2	S1S2		
<i>Melanoplus</i> sp 59	A spur-throat grasshopper	G1G2	S1S2		
<i>Scudderia septentrionalis</i>	Northern bush katydid	G3?	S1S3		
HETEROPTERA (TRUE BUGS)					
<i>Acantholomidea denticulata</i>	A shield bug	G?	SH		
<i>Allopodops mississippiensis</i>	Mississippi turtle bug	G2G3	SH		
<i>Bothynotus johnstoni</i>	A mirid bug	G3	S1S3		
<i>Botocudo modestus</i>	A seed bug	G5	S1S3		
<i>Chelinidea vittiger</i>	Opuntia squash bug	G3G5	SR		
<i>Chlorochroa dismalia</i>	Dismal Swamp green stink bug	GU	S1S3		
<i>Ctenotrachelus shermani</i>	Combneck assassin bug	G3	S1S3		
<i>Elasmostethus atricornis</i>	Hercules club stink bug	G3?	S1S3		
<i>Eurygaster alternata</i>	A shield bug	G5	SH		
<i>Galgupha denudata</i>	A shield bug	G3	S1S3		
<i>Isthmocorius piceus</i>	Black stalk-eyed bug	G5	S1S2		
<i>Limnoperus dissortis</i>	A water strider	G5	S1		
<i>Melanaethus cavicornis</i>	A burrower bug	G4	S1S3		
<i>Oncozygia clavicornis</i>	A turtle bug	G3	SH		
<i>Ploiarria carolina</i>	Carolina thread-legged bug	G4?	S1S3		
<i>Ploiarria hirticornis</i>	An assassin bug	G3?	S1S3		
<i>Pniortis brimleyi</i>	Brimley's assassin bug	G2	S1S3		
<i>Pycnoderella virginiana</i>	Seashore plant bug	GU	SU		
<i>Ramphocorixa acuminata</i>	Acuminate water boatman	G4	S1		
<i>Ranatra drakei</i>	Drake's water scorpion	G4	S1S3		
<i>Sigara depressa</i>	Virginia Piedmont water boatman	G1G2	S1S2		LE
<i>Stachyocnemus apicalis</i>	Sandpit alydid bug	G4	SH		
<i>Stenocoris tipuloides</i>	Neotropical rice bug	G5	S1S3		
HOMOPTERA (CICADAS, LEAFHOPPERS & RELATIVES)					
<i>Puto kosztarabi</i>	Buffalo Mountain mealybug	G1	S1		LE
COLEOPTERA (BEETLES)					
<i>Anthophylax hoffmani</i>	A longhorned beetle	G?	S1S3		
<i>Arianops jeanneli</i>	A cave pselaphid beetle	G1	S1		
<i>Atheta annexa</i>	A rove beetle	G2G4	S2		
<i>Atheta troglophila</i>	A rove beetle	G1	S1		
<i>Calligrapha pnirsa</i>	A leaf beetle	G3?	S1S3		
<i>Cicindela abdominalis</i>	Orange-bellied tiger beetle	G5	S1		
<i>Cicindela ancocisconensis</i>	Riverbank tiger beetle	G3	S2		
<i>Cicindela dorsalis dorsalis</i>	Northeastern beach tiger beetle	G4T2	S2	LT	LT
<i>Cicindela formosa generosa</i>	A tiger beetle	G5T5	SH		
<i>Cicindela gratiosa</i>	A tiger beetle	G5	S1		
<i>Cicindela lepida</i>	Spectral tiger beetle	G4	S1		
<i>Cicindela limbalis</i>	A tiger beetle	G5	SH		
<i>Cicindela patruela</i>	Barrens tiger beetle	G3	S2		
<i>Cicindela trifasciata</i>	A tiger beetle	G5	S1		
<i>Cyclotrachelus incisus</i>	A ground beetle	G2	S1		

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COLEOPTERA (continued)					
<i>Dryobius sexnotatus</i>	Six-banded longhorn beetle	G?	S1S3		
<i>Hydraena maureenae</i>	Maureen's shale stream beetle	G1G3	S1S3		
<i>Laccophilus schwarzi</i>	Schwarz' diving beetle	G?	S1S3		
<i>Lordithon niger</i>	Black lordithon rove beetle	GU	SH		
<i>Nicrophorus americanus</i>	American burying beetle	G2G3	SH	LE	
<i>Pentagonica picticornis</i>	A ground beetle	G?	S1S3		
<i>Phloeoxena signata</i>	A ground beetle	G3?	S1S3		
<i>Pseudanophthalmus avernus</i>	Avernus cave beetle	G1	S1		
<i>Pseudanophthalmus cordicollis</i>	Little Kennedy Cave beetle	G1	S1		
<i>Pseudanophthalmus deceptivus</i>	Deceptive cave beetle	G1	S1		
<i>Pseudanophthalmus delicatus</i>	Delicate cave beetle	G2	S2		
<i>Pseudanophthalmus egberti</i>	New River Valley cave beetle	G1	S1		
<i>Pseudanophthalmus gracilis</i>	A cave beetle	G1G2	S1S2		
<i>Pseudanophthalmus hirsutus</i>	Cumberland Gap cave beetle	G1	S1		
<i>Pseudanophthalmus hoffmani</i>	Hoffman's cave beetle	G1G2	S1S2		
<i>Pseudanophthalmus holsingeri</i>	Holsinger's cave beetle	G1	S1	C	LE
<i>Pseudanophthalmus hortulanus</i>	Burkes Garden cave beetle	G1	S1		
<i>Pseudanophthalmus hubbardi</i>	Hubbard's cave beetle	G1	S1		
<i>Pseudanophthalmus hubrichti</i>	Hubricht's cave beetle	G1	S1		
<i>Pseudanophthalmus intersectus</i>	Crossroads Cave beetle	G1	S1		
<i>Pseudanophthalmus limicola</i>	Mud-dwelling cave beetle	G1	S1		
<i>Pseudanophthalmus longiceps</i>	Long-headed cave beetle	G1	S1		
<i>Pseudanophthalmus nelsoni</i>	Nelson's cave beetle	G1	S1		
<i>Pseudanophthalmus parvicollis</i>	Thin-neck cave beetle	G1	S1		
<i>Pseudanophthalmus petrunkevitchi</i>	Petrunkewitch's cave beetle	G1G2	S1		
<i>Pseudanophthalmus pontis</i>	Natural Bridge cave beetle	GH	SH		
<i>Pseudanophthalmus potomaca potomaca</i>	South Branch Valley cave beetle	G2T2	S2		
<i>Pseudanophthalmus praetermissus</i>	Overlooked cave beetle	G1	S1		
<i>Pseudanophthalmus punctatus</i>	Spotted cave beetle	G1	S1		
<i>Pseudanophthalmus pusio</i>	A cave beetle	G3	S1S2		
<i>Pseudanophthalmus quadratus</i>	Straley's Cave beetle	G1	S1		
<i>Pseudanophthalmus rotundatus</i>	Rotund cave beetle	G1G3	S1		
<i>Pseudanophthalmus sanctipauli</i>	Saint Paul cave beetle	G1	S1		
<i>Pseudanophthalmus seclusus</i>	A cave beetle	G1	S1		
<i>Pseudanophthalmus sericus</i>	Silken cave beetle	G1	S1		
<i>Pseudanophthalmus thomasi</i>	Thomas' cave beetle	G1	S1		
<i>Pseudanophthalmus vicarius</i>	Vicariant cave beetle	G1G2	S1S2		
<i>Pseudanophthalmus virginicus</i>	Maiden Spring cave beetle	GH	SH		
<i>Pseudanophthalmus</i> sp 4 = <i>P.</i> sp A (jonesi group)	A cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 5 = <i>P.</i> sp A (petrunkevitchi group)	A cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 6 = <i>P.</i> sp. B (petrunkevitchi group)	A cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 7 = <i>P.</i> sp C (petrunkevitchi group)	A cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 8 = <i>P.</i> sp A (hubbardi group)	A cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 9 = <i>P.</i> sp A (hubrichti group)	A cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 10 = <i>P.</i> sp B (hubrichti group)	A cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 11 = <i>P.</i> sp A (pusio group)	A cave beetle	G1	S1		

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COLEOPTERA (continued)					
<i>Pseudanophthalmus</i> sp 12 = <i>P.</i> sp B (<i>pusio</i> group)	Catawba Cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 13 = <i>P.</i> sp B (<i>hubbardi</i> group)	McMullan Cave beetle	G1	S1		
<i>Pseudanophthalmus</i> sp 14 = <i>P.</i> sp C (<i>pusio</i> group)	Karl's Pit cave beetle	G1	S1		
<i>Pseudaptinus lecontei</i>	A ground beetle	G?	S1S3		
<i>Sosylus costatus</i>	A beetle	G?	S1S3		
<i>Sphaeroderus schaumi</i>	Schaum's ground beetle	G4	S2		
<i>Stenelmis gammoni</i>	Gammon's riffle beetle	G1G3	S1		
<i>Stenocorus schaumi</i>	Schaum's longhorn beetle	G?	S1S3		
<i>Thalpius pygmaeus</i> = <i>Pseudaptinus pygmaeus</i>	A ground beetle	G?	S1		
MECOPTERA (SCORPIONFLIES)					
<i>Boreus nivoriundus</i>	A snow scorpionfly	G4	S1S2		
<i>Brachypanorpa jeffersoni</i>	Jefferson's short-nosed scorpionfly	G2	S1S2		
TRICHOPTERA (CADDISFLIES)					
<i>Anabolia apora</i>	A limnephilid caddisfly	G1G3	S1S3		
<i>Nemotauius hostilis</i>	A limnephilid caddisfly	G5	S1		
<i>Rhyacophila appalachia</i>	Appalachian rhyacophilid caddisfly	G3?	S1S3		
<i>Rhyacophila tricornuta</i>	A rhyacophilid caddisfly	G1G3	S1S3		
<i>Wormaldia thyria</i>	A philopotamid caddisfly	G3?	S1S3		
LEPIDOPTERA (BUTTERFLIES, SKIPPERS & MOTHS)					
Butterflies					
<i>Anaea andria</i>	Goatweed leafwing	G5	S1		
<i>Boloria selene</i>	Silver-bordered fritillary	G5	S2		
<i>Calephelis borealis</i>	Northern metalmark	G3G4	S2S3		
<i>Calephelis virginiensis</i>	Little metalmark	G4	S1		
<i>Callophrys hesseli</i> = <i>Mitoura hesseli</i>	Hessel's hairstreak	G3G4	S1		
<i>Callophrys irus</i> = <i>Incisalia irus</i> , <i>Deciduphagus irus</i>	Frosted elfin	G3	S2		
<i>Callophrys polios</i> = <i>Incisalia polios</i> , <i>Deciduphagus polios</i>	Hoary elfin	G5	S1S3		
<i>Colias interior</i>	Pink-edged sulphur	G5	S1S2		
<i>Euchloe olympia</i>	Olympia marble	G4G5	S2S3		
<i>Lycaena hyllus</i>	Bronze copper	G5	S1		
<i>Neonympha areolata areolata</i>	Georgia satyr	G4T3T4	S2S3		
<i>Neonympha mitchellii francisci</i>	Saint Francis' satyr	G1G2T1	S1	LE	LT
<i>Phyciodes batesii</i>	Tawny crescent	G4T1	SH		
<i>Phyciodes cocyta</i> = <i>Phyciodes pascoensis</i> , <i>Phyciodes selenis</i>	Northern crescent	G5	S1S3		
<i>Satyrium caryaevorum</i>	Hickory hairstreak	G4	S1S3		
<i>Satyrium kingi</i>	King's hairstreak	G3G4	S2S3		
<i>Speyeria atlantis</i>	Atlantis fritillary	G5	S2		
<i>Speyeria idalia idalia</i>	Regal fritillary	G3T1Q	S1		

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LEPIDOPTERA (continued)

Skippers

<i>Amblyscirtes alternata</i>	Dusky roadside-skipper	G3G4	S1		
<i>Atrytone arogos arogos</i>	Arogos skipper	G3G4T1T2	SH		
<i>Erynnis lucilius</i>	Columbine duskywing	G4	S1S3		
<i>Erynnis martialis</i>	Mottled duskywing	G3G4	S1S3		
<i>Erynnis persius persius</i>	Persius duskywing	G5T2T3	S1		
<i>Euphyes bimacula</i>	Two-spotted skipper	G4	S2		
<i>Euphyes conspicua</i>	Black dash	G4	S1S3		
<i>Euphyes dukesi</i>	Dukes' skipper	G3	S2		
<i>Euphyes pilatka</i>	Palatka skipper	G3G4	SH		
<i>Hesperia attalus slossonae</i>	Dotted skipper	G3G4T3	SH		
<i>Megathymus yuccae</i>	Yucca giant-skipper	G5	SH		
<i>Polites mystic</i>	Long dash	G5	S1?		
<i>Problema bulenta</i>	Rare skipper	G2G3	S1		
<i>Pyrgus wyandot</i>	Appalachian grizzled skipper	G2	S1S2		LT
= <i>Pyrgus centaureae wyandot</i>					

Moths

<i>Acherdoa ferraria</i>	Chocolate moth	G5	S1S2		
<i>Arapex relicta</i>	Cane-boring moth	G4	S1S3		
<i>Acronicta albarufa</i>	Barrens dagger moth	G3G4	S1S3		
<i>Acronicta brumosa</i>	A dagger moth	G4?	S1		
<i>Anaplectoides brunneomedia</i>	Brown-lined dart moth	G4	S1S3		
<i>Apamea smythi</i>	Smyth's Apamea moth	GH	SH		
<i>Apamea sp 1</i>	Cane Apamea moth	G3G4	S1S2		
<i>Aplectoides condita</i>	A noctuid moth	G4	S1S3		
<i>Argillophora furcilla</i>	A cane moth	G2G4	S1S3		
<i>Argyrostralis deleta</i>	A noctuid moth	G4G5	S1S3		
<i>Argyrostralis sylvarum</i>	A noctuid moth	G4	S1S3		
<i>Arugisa watsoni</i>	Watson's Arugisa moth	G4	S1S3		
<i>Brachionycta borealis</i>	Boreal fan moth	G4	S1S3		
<i>Callosamia securifera</i>	Sweetbay silkworm	G4	S1S2		
<i>Catocala consors sorsconii</i>	Consort underwing	G4T2T4	SH		
<i>Catocala dulciola</i>	Sweet underwing	G3	S1S3		
<i>Catocala herodias gerhardi</i>	Pine barrens underwing	G3T3	S2S3		
<i>Catocala marmorata</i>	Marbled underwing	G3G4	S2		
<i>Catocala messalina</i>	Messalina underwing	G4	SH		
<i>Catocala pretiosa pretiosa</i>	Precious underwing	G4T2T3	SH		
<i>Catocala ulalume</i>	Ulalume underwing	G4	S1S3		
<i>Crambidia cephalica</i>	Yellow-headed lichen moth	G4	S1S2		
<i>Cymatophora approximaria</i>	A geometrid moth	G4G5	S1S3		
<i>Drasteria graphica atlantica</i>	Atlantic graphic moth	G4T4	S2S3		
<i>Dysstroma citrata</i>	A geometrid moth	G5	S1S3		
<i>Emarginea percara</i>	A noctuid moth	G4	S1S3		
<i>Erythroecia hebardi</i>	Hebard's noctuid moth	GU	SH		
<i>Euchlaena milnei</i>	Milne's Euchlaena moth	G2G4	S2		
<i>Euxoa immixta</i>	Mixed dart moth	G4	SH		
<i>Faronta rubripennis</i>	Pink-streak moth	G3G4	S1S3		
<i>Franclemontia interrogans</i>	A cane moth	G3G4	S1S3		
<i>Hadena ectypa</i>	A noctuid moth	G3G4	S1S3		
<i>Heterocampa astarte</i>	A prominent moth	G4G5	S1S2		
<i>Hypomecis buchholzaria</i>	Buchholz's gray moth	G3G4	S1S3		

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Moths (continued)					
<i>Hyppa contrasta</i>	A noctuid moth	G4	S1S3		
<i>Idaea tacturata</i>	A geometrid moth	G4	S1S2		
<i>Itame ribearia</i>	Currant spanworm moth	G4	S1S3		
<i>Itame</i> sp 1	Barrens Itame moth	G3	S1S3		
<i>Leucania calidior</i>	A cane moth	GU	S1S3		
<i>Lithacodia</i> sp 1	A noctuid moth	G4	S1S2		
<i>Lithophane lemmeri</i>	Lemmer's pinion moth	G3G4	S1S3		
<i>Lithophane lepida adipel</i>	A pinion moth	G4T4	S1S3		
<i>Lophosis labeculata</i>	A geometrid moth	GU	S1S3		
<i>Lytrosis permagnaria</i>	A geometrid moth	G3G4	S1S3		
<i>Merolonche dolli</i>	Doll's Merlonch moth	G3G4	S1S3		
<i>Meropleon cosmion</i>	A noctuid moth	G4	S1S3		
<i>Meropleon titan</i>	A noctuid moth	G2G4	S1S3		
<i>Metarranthis</i> sp 1	A geometrid moth	G3	S1S3		
<i>Metria amella</i>	A noctuid moth	G5	S1S2		
<i>Nemoria elfa</i>	Elfin emerald	G?	S1S3		
<i>Nemoria tuscarora</i>	Tuscarora emerald	GU	S1S3		
<i>Oxycilla mitographa</i>	A noctuid moth	G4	SH		
<i>Paectes abrostolella</i>	A noctuid moth	G4	S1S2		
<i>Panopoda repanda</i>	Orange Panopoda moth	G5	S1S2		
<i>Papaipema astuta</i>	Yellow stoneroot borer moth	G3G4	S1S3		
<i>Papaipema duovata</i>	Seaside goldenrod borer moth	G4	S1S3		
<i>Papaipema duplicata</i>	Dark stoneroot borer moth	G2G4	S1S3		
<i>Papaipema necopina</i>	Sunflower borer moth	G4?	S1S3		
<i>Papaipema speciosissima</i>	Osmunda stem borer moth	G4	S1S3		
<i>Papaipema stenocelis</i>	Chain fern borer moth	G4	S1S3		
<i>Papaipema</i> sp 3	Southeastern cane borer moth	G4	S2S3		
<i>Polychrysia morigera</i>	A noctuid moth	G4	S2S3		
<i>Properigea</i> sp 1 (= <i>Properigea costa</i> ?)	A noctuid moth	G2G3Q	S1S3		
<i>Ptichodis bistrigata</i>	Southern Ptichodis moth	G3	S1S3		
<i>Pygarctia abdominalis</i>	Yellow-edged Pygarctia moth	G3G4	S1S2		
<i>Richia grotei</i>	A noctuid moth	G4	S1S3		
<i>Schinia siren</i>	A flower moth	G?	S1S2		
= <i>Schinia inclara</i>					
<i>Semiothisa distribuaria</i>	A geometrid moth	G4	S1S2		
<i>Sphinx franckii</i>	Franck's sphinx	G4	S2S3		
<i>Synanthedon castaneae</i>	Chestnut clearwing moth	G3G5	SH		
<i>Syngrapha rectangula</i>	Salt-and-pepper looper moth	G5	S1S3		
<i>Tischeria perplexa</i>	Chestnut leaf-mining moth	GHQ	SH		
<i>Xanthorhoe iduata</i>	A geometrid moth	G4	S1S3		
<i>Zale curema</i>	A noctuid moth	G3G4	S1S3		
<i>Zale</i> sp 1	Pine barrens Zale moth	G3G4	S1S3		
<i>Zale</i> sp 2	A Zale moth	G4Q	S1S3		
<i>Zale</i> sp 3	Maritime Zale moth	G3?	S2		
<i>Zanclognatha gypsalis</i>	A noctuid moth	G4	S1S3		

DIPTERA (TRUE FLIES)

<i>Basilia boardmanni</i>	Southeastern myotis bat fly	G3	S1S2	
<i>Fletcherimyia fletcheri</i>	Pitcher plant fly	G5	S1S2	
<i>Metriocnemus knabi</i>	Pitcher plant midge	G5	S2	
<i>Spelobia tenebrarum</i>	A cave fly	G4G5	S1	
<i>Wyeomyia haynei</i>	Southern pitcher plant mosquito	G4	S2	

APPENDIX 1. FEDERALLY ENDANGERED AND THREATENED VERTEBRATE ANIMALS OF VIRGINIA
 (exclusive of extirpated species, see Appendix 3)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
VERTEBRATES					
FISH					
<i>Cyprinella monacha</i> = <i>Hybopsis monacha</i>	Turquoise shiner (or spotfin chub)	G2	S1	LT	LT
<i>Erimystax cahni</i> = <i>Hybopsis cahni</i>	Slender chub	G1	S1	LT	LT
<i>Etheostoma percnurum</i>	Duskytail darter	G1	S1	LE	LE
<i>Noturus flavipinnis</i>	Yellowfin madtom	G1	S1	LT	LT
<i>Percina rex</i>	Roanoke logperch	G1G2	S1S2	LE	LE
<i>Phoxinus cumberlandensis</i>	Blackside dace	G2	S1	LT	
AMPHIBIANS					
<i>Plethodon shenandoah</i>	Shenandoah salamander	G1	S1	LE	LE
REPTILES					
<i>Caretta caretta</i>	Loggerhead (sea turtle)	G3	S1B/S1N	LT	LT
<i>Chelonia mydas</i>	Green turtle	G3	SZN	LT	LT
<i>Dermochelys coriacea</i>	Leatherback (sea turtle)	G2	SZN	LE	LE
<i>Eretmochelys imbricata</i>	Atlantic hawksbill (sea turtle)	G3	SA	LE	LE
<i>Glyptemys muhlenbergii</i> = <i>Clemmys muhlenbergii</i>	Bog turtle	G3	S1S2	LT/SA	LE
<i>Lepidochelys kempii</i>	Kemp's ridley (sea turtle)	G1	S1N	LE	LE
BIRDS					
<i>Charadrius melanotos</i>	Piping Plover	G3	S2B/S1N	LT	LT
<i>Dendroica kirtlandii</i>	Kirtland's Warbler	G1	SZN	LE	LE
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G4	S2S3B/S3N	LT/PDL	LT
<i>Picoides borealis</i>	Red-cockaded Woodpecker	G3	S1	LE	LE
<i>Sterna dougallii</i>	Roseate Tern	G4	SHB/SZN	LE	LE
MAMMALS					
<i>Balaenoptera borealis</i>	Sei whale	G3	SN?	LE	LE
<i>Balaenoptera musculus</i>	Blue whale	G3G4	SN?	LE	LE
<i>Balaenoptera physalus</i>	Fin whale	G3G4	SZN	LE	LE
<i>Corynorhinus townsendii virginianus</i> = <i>Plecotus townsendii virginianus</i>	Virginia big-eared bat	G4T2	S1	LE	LE
<i>Eubalaena glacialis</i> = <i>Balaena glacialis</i>	Northern right whale	G1	SZN	LE	LE
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	G5T1	S1	LE	LE
<i>Glaucomys sabrinus fuscus</i>	Virginia northern flying squirrel	G5T2	S1	LE	LE
<i>Megaptera novaeangliae</i>	Humpback whale	G3	SZN	LE	LE
<i>Myotis grisescens</i>	Gray myotis (bat)	G3	S1	LE	LE
<i>Myotis sodalis</i>	Indiana myotis (bat)	G2	S1	LE	LE
<i>Physeter macrocephalus</i> = <i>Physeter catodon</i>	Sperm whale	G3G4	SA	LE	LE
<i>Sciurus niger cinereus</i>	Delmarva Peninsula fox squirrel	G5T3	S1	LE	LE
<i>Trichechus manatus</i>	West Indian manatee	G2	SA	LE	LE

APPENDIX 2. FEDERALLY ENDANGERED AND THREATENED INVERTEBRATE ANIMALS OF VIRGINIA
 (exclusive of extirpated species, see Appendix 3)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
INVERTEBRATES					
GASTROPODA (SNAILS)					
<i>Polygyriscus virginianus</i>	Virginia fringed mountain snail	G1	S1	LE	LE
BIVALVIA (MUSSELS)					
<i>Alasmidonta heterodon</i>	Dwarf wedgemussel	G1G2	S1	LE	LE
<i>Cyprogenia stegaria</i> = <i>Cyprogenia irrorata</i>	Fanshell	G1	S1	LE	LE
<i>Dromus dromas</i>	Dromedary pearlymussel	G1	S1	LE	LE
<i>Epioblasma brevidens</i>	Cumberland combshell	G1	S1	LE	LE
<i>Epioblasma capsaeformis</i>	Oyster mussel	G1	S1	LE	LE
<i>Epioblasma florentina walkeri</i>	Tan riffleshell	G1T1	S1	LE	LE
<i>Fusconaia cor</i> = <i>Fusconaia edgariana</i>	Shiny pigtoe	G1	S1	LE	LE
<i>Fusconaia cuneolus</i>	Fine-rayed pigtoe	G1	S1	LE	LE
<i>Hemistena lata</i> = <i>Lastena lata</i>	Cracking pearlymussel	G1	S1	LE	LE
<i>Lemiox rimosus</i> = <i>Conradilla caelata</i>	Birdwing pearlymussel	G1	S1	LE	LE
<i>Pegias fabula</i>	Little-winged pearlymussel	G1	S1	LE	LE
<i>Pleurobema collina</i>	James spiny mussel	G1	S1	LE	LE
<i>Pleurobema plenum</i>	Rough pigtoe	G1	SH	LE	LE
<i>Quadrula cylindrica strigillata</i>	Rough rabbits foot	G3T2	S2	LE	LE
<i>Quadrula intermedia</i>	Cumberland monkeyface	G1	S1	LE	LE
<i>Quadrula sparsa</i>	Appalachian monkeyface	G1	S1	LE	LE
<i>Villosa perpurpurea</i>	Purple bean	G1	S1	LE	LE
CRUSTRACEA (AMPHIPODS, ISOPODS & DECAPODS)					
<i>Antrolana lira</i>	Madison Cave isopod	G2	S2	LT	LT
<i>Lirceus usdagalun</i>	Lee County cave isopod	G1	S1	LE	LE
INSECTA (INSECTS)					
Beetles					
<i>Cicindela dorsalis dorsalis</i>	Northeastern beach tiger beetle	G4T2	S2	LT	LT
<i>Nicrophorus americanus</i>	American burying beetle	G2G3	SH	LE	
Butterflies					
<i>Neonympha mitchellii francisci</i>	Saint Francis' satyr	G1G2T1	S1	LE	LT

APPENDIX 3. EXTINCT AND EXTRIPATED ANIMALS OF VIRGINIA

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
VERTEBRATES					
FISH					
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	G3	SX	LE	LE
<i>Moxostoma lacerum</i> = <i>Lagochila lacera</i>	Harelip sucker	GX	SX		
<i>Percina maculata</i>	Blackside darter	G5	SX		
<i>Percopsis omiscomaycus</i>	Trout-perch	G5	SX		
BIRDS					
<i>Conuropsis carolinensis</i>	Carolina parakeet	GX	SX		
<i>Cygnus buccinator</i>	Trumpeter swan	G4	SXN		
<i>Ectopistes migratorius</i>	Passenger pigeon	GX	SX		
<i>Vermivora bachmanii</i>	Bachman's warbler	GH	SX	LE	LE
MAMMALS					
<i>Bos bison</i> = <i>Bison bison</i>	Bison	G4	SX		
<i>Canis lupus</i>	Gray wolf	G4	SX	LE	LE
<i>Canis rufus</i>	Red wolf	G1	SX	LE	
<i>Cervus elaphus</i>	Wapiti or elk	G5	SX		
<i>Erethizon dorsatum</i>	Porcupine	G5	SX		
<i>Puma concolor couguar</i> = <i>Felis concolor couguar</i>	Eastern cougar	G5TH	SX	LE	LE
INVERTEBRATES					
BIVALVIA (MUSSELS)					
<i>Epioblasma haynsiana</i>	Acornshell	GX	SX		
<i>Epioblasma lenior</i>	Narrow catspaw	GX	SX		
<i>Epioblasma torulosa gubernaculum</i>	Green-blossom pearlymussel	G2TX	SX	LE	LE
<i>Lampsilis abrupta</i>	Pink mucket	G2	SX	LE	LE
<i>Villosa fabalis</i>	Rayed bean	G1G2	SX		
<i>Villosa trabalis</i>	Cumberland bean	G1	SX	LE	LE

APPENDIX 4. NATURAL HERITAGE VERTEBRATE WATCH LIST

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
FISH					
<i>Ambloplites cavifrons</i>	Roanoke bass	G3	S3		SC
<i>Chologaster cornuta</i>	Swampfish	G5	S3		
<i>Enneacanthus obesus</i>	Banded sunfish	G5	S3		
<i>Erimystax dissimilis</i> = <i>Hybopsis dissimilis</i>	Streamline chub	G4	S3		
<i>Erimystax insignis</i> = <i>Hybopsis insignis</i>	Blotched chub	G3G4	S3		
<i>Etheostoma kanawhae</i>	Kanawha darter	G4	S3		
<i>Etheostoma zonale</i>	Banded darter	G5	S3		
<i>Fundulus catenatus</i>	Northern studfish	G5	S3		
<i>Lampetra aepyptera</i>	Least brook lamprey	G5	S3		
<i>Lampetra appendix</i>	American brook lamprey	G4	S3		
<i>Margariscus margarita</i> = <i>Semotilus margarita</i>	Pearl dace	G5	S3		
<i>Moxostoma duquesnei</i>	Black redhorse	G5	S3		
<i>Notropis chalybaeus</i>	Ironcolor shiner	G4	S3		
<i>Notropis chiliticus</i>	Redlip shiner	G4	S3		
<i>Notropis</i> sp 4	Sawfin shiner	G4	S3		
<i>Percina caprodes</i>	Logperch	G5	S3		
<i>Percina gymnocephala</i>	Appalachia darter	G4	S3		
<i>Percina oxyrhynchus</i>	Sharpnose darter	G4	S3		
<i>Phenacobius uranops</i>	Stargazing minnow	G4	S3		
<i>Scartomyzon ariommus</i> = <i>Moxostoma ariommum</i>	Bigeye jumprock	G4	S3		
AMPHIBIANS					
<i>Aneides aeneus</i>	Green salamander	G3G4	S3		
<i>Desmognathus orestes</i>	Blue Ridge dusky salamander	G4	S3		
<i>Plethodon kentucki</i>	Cumberland Plateau salamander	G4	S3		
<i>Plethodon yonahlossee</i>	Yonahlossee salamander	G4	S3		
<i>Pseudacris ocularis</i> = <i>Limnaoedus ocularis</i>	Little grass frog	G5	S3		
<i>Rana virgatipes</i>	Carpenter frog	G5	S3		SC
<i>Siren lacertina</i>	Greater siren	G5	S3		
<i>Stereochilus marginatus</i>	Many-lined salamander	G5	S3		
REPTILES					
<i>Farancia erythrogramma</i>	Rainbow snake	G5	S3		
<i>Liophlorophis vernalis</i> = <i>Ophedrys vernalis</i>	Smooth greensnake	G5	S3		
<i>Malaclemys terrapin terrapin</i>	Northern diamond-backed terrapin	G4T4	S4		

NATURAL HERITAGE VERTEBRATE WATCH LIST (continued)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
BIRDS					
<i>Accipiter cooperii</i>	Cooper's Hawk	G5		S3B/S3N	
<i>Ardea herodias</i>	Great Blue Heron	G5		S3B/S5N	
<i>Certhia americana</i>	Brown Creeper	G5		S3B/S5N	
<i>Dendroica cerulea</i>	Cerulean Warbler	G4		S3S4B/SZN	
<i>Dendroica virens waynei</i>	Wayne's Black-throated Green Warbler	G5TU		S2B/SZN	
<i>Dolichonyx oryzivorus</i>	Bobolink	G5		S1B/SZN	
<i>Empidonax minimus</i>	Least Flycatcher	G5		S3S4B/SZN	
<i>Ictinia mississippiensis</i>	Mississippi Kite	G5		S1B	
<i>Ixobrychus exilis</i>	Least Bittern	G5		S3B/S3N	
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	G5		S3B/S4N	
<i>Passerculus sandwichensis</i>	Savannah Sparrow	G5		S3S4B/S4N	
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	G5		S3S4B/SZN	
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	G5		S2B/S4S5N	
<i>Riparia riparia</i>	Bank Swallow	G5		S3B/SZN	
<i>Sitta pusilla</i>	Brown-headed Nuthatch	G5		S3S4	
<i>Spiza americana</i>	Dickcissel	G5		S3B/SZN	SC
<i>Sterna forsteri</i>	Forster's Tern	G5		S3B/S3N	SC
<i>Sterna hirundo</i>	Common Tern	G5		S3B/SZN	
<i>Tyto alba</i>	Barn Owl	G5		S3B/S3N	SC
<i>Vermivora chrysoptera</i>	Golden-winged Warbler	G4		S3B/SZN	SC
<i>Vermivora pinus</i>	Blue-winged Warbler	G5		S3B/SZN	
<i>Wilsonia canadensis</i>	Canada Warbler	G5		S3S4B/SZN	
MAMMALS					
<i>Blarina brevicauda telmalestes</i>	Dismal Swamp short-tailed shrew	G5T3	S3		
<i>Lasionycteris noctivagans</i>	Silver-haired bat	G5	SUB/S4N		
<i>Lasiurus cinereus</i>	Hoary bat	G5		SUB/S3N	
<i>Lontra canadensis</i> = <i>Lutra canadensis</i>	River otter	G5	S4		SC
<i>Mustela nivalis</i>	Least weasel	G5	S3		
<i>Myotis septentrionalis</i>	Northern myotis (bat)	G4	S3S4		
<i>Neotoma magister</i>	Allegheny woodrat	G3G4	S3		
<i>Peromyscus gossypinus</i>	Cotton mouse	G5	S3		
<i>Peromyscus leucopus easti</i>	Pungo mouse	G5T1	S1?		
<i>Sciurus niger niger</i>	Southeastern fox squirrel	G5T5	S3		
<i>Sorex dispar</i>	Long-tailed or rock shrew	G4	S3		
<i>Spilogale putorius</i>	Eastern spotted skunk	G5	S3S4		
<i>Sylvilagus palustris</i>	Marsh rabbit	G5	S3		
<i>Synaptomys cooperi helaleutes</i>	Dismal Swamp bog lemming	G5T3	S3		SC

APPENDIX 5. NATURAL HERITAGE INVERTEBRATE WATCH LIST

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
GASTROPODA (SNAILS)					
<i>Elimia arachnoidea</i>	Spider Elimia	G3	S3		
<i>Elimia catenaria</i>	Gravel Elimia	G4	S3		
<i>Euconulus chersinus</i>	Wild hive	G4	SR		
<i>Ferrissia fragilis</i>	Fragile aencylid	G5	SU		
<i>Ferrissia parallelus</i>	Oblong aencylid	G5	SU		
<i>Fontigens orolibas</i>	Blue Ridge springsnail	G3	S3		
<i>Fossaria dalli</i>	Dusky Fossaria	G5	SU		
<i>Gyraulus deflectus</i>	Flexed Gyro	G5	SU		
<i>Hendersonia occulta</i>	Cherrystone Drop	G4	S3		
<i>Lobosculum pustuloides</i>	Tiny Liptooth	G3G4	S2S4		
<i>Mesomphix rugeli</i>	Wrinkled button	G3	S3		
<i>Patera laevior</i>	Smooth Bladetooth	G4	S2S4		
<i>Philomycus virginicus</i>	Virginia mantleslug	G3	S3		
<i>Pleurocera gradata</i>	Bottle hornsnail	G3	S3?		
<i>Pleurocera uncialis</i>	Pagoda hornsnail	G5	S3?		
<i>Promenetus exacuous</i>	Sharp Sprite	G5	SU		
<i>Somatogyrus pennsylvanicus</i>	Shale pebblesnail	G3	SU		
<i>Triodopsis burchi</i>	Pittsylvania three-tooth	G3	S3		
<i>Triodopsis fraudulenta</i>	Baffled three-tooth	G3	S3		
<i>Triodopsis tennesseensis</i>	Budded three-tooth	G3G4	S3		
<i>Valvata bicarinata</i>	Two-ridge Valvata	G5	SU		
<i>Valvata tricarinata</i>	Three-ridge Valvata	G5	SU		
<i>Ventridens arcellus</i>	Golden dome	G3G4	S3		
<i>Ventridens lasmodon</i>	Hollow dome	G3	S3		
<i>Vertigo parvula</i>	Smallmouth Vertigo	G1G3	SU		

BIVALVIA (MUSSELS & CLAMS)

Mussels

<i>Alasmidonta undulata</i>	Triangle floater	G4	S3S4
<i>Anodonta implicata</i>	Alewife floater	G5	S3S4
<i>Fusconaia subrotunda</i>	Longsolid	G3	S3
<i>Leptodea ochracea</i>	Tidewater mucket	G4	S3
<i>Ligumia nasuta</i>	Eastern pondmussel	G4G5	S3
<i>Medionidus conradicus</i>	Cumberland moccasin	G3G4	S3S4
<i>Strophitus undulatus</i>	Creeper	G5	S3S4
<i>Uniomerus caroliniana</i> = <i>Uniomerus obesus</i>	Florida pondhorn	G4	S3
<i>Utterbackia imbecillis</i> = <i>Anodonta imbecillis</i> , <i>Pyganodon imbecillis</i>	Paper pondshell	G5	S3
<i>Villosa constricta</i>	Notched rainbow	G3	S3

ARACHNIDA (SPIDERS, PSEUDOSCORPIONS & RELATIVES)

Spiders

<i>Gasteracantha cancriformis</i>	Crablike spiny orb weaver	G5	S3
<i>Gnaphosa fontinalis</i>	A gnaphosid spider	G4?	S3
<i>Hypochilus gertschi</i>	Gertsch's lampshade-web spider	G3	S3
<i>Lycosa lenta</i>	A wolf spider	G4	S3
<i>Sphodros atlanticus</i>	Atlantic purse-web spider	G4	S3
<i>Sphodros coylei</i>	Coyle's purse-web spider	G4?	S3
<i>Sphodros niger</i>	Black purse-web spider	G4G5	S3
<i>Sphodros rufipes</i>	Red-legged purse-web spider	G4	SU

NATURAL HERITAGE INVERTEBRATE WATCH LIST (continued)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
Pseudoscorpions <i>Chitrella cavicola</i>	A cave pseudoscorpion	G3	S3		
CRUSTACEA (AMPHIPODS, ISOPODS & DECAPODS)					
Amphipods					
<i>Crangonyx antennatus</i>	Appalachian Valley cave amphipod	G3G5	S3		
<i>Gammarus pseudolimnaeus</i>	Northern spring amphipod	G5	S3		
<i>Stygobromus araeus</i>	Tidewater interstitial amphipod	G3	S3		SC
<i>Stygobromus indentatus</i>	Tidewater amphipod	G3	S3		SC
<i>Stygobromus spinosus</i>	Blue Ridge spring amphipod	G3	S3		
Isopods					
<i>Caecidotea recurvata</i>	Southwestern Virginia cave isopod	G3	S3		
Decapods					
<i>Cambarus angularis</i>	Clinch River crayfish	G3	S3		
<i>Cambarus chasmodactylus</i>	New River riffle crayfish	G4	S3		
<i>Cambarus diogenes</i>	Devil crayfish	G5	S3		
<i>Cambarus longirostris</i>	A crayfish	G5	S3		
<i>Fallicambarus fodiens</i> = <i>Fallicambarus uhleri</i>	A crayfish	G5	S3		
<i>Orconectes obscurus</i>	A crayfish	G5	S3		
<i>Orconectes spinosus</i>	A crayfish	G5	S3		
Branchiopods					
<i>Eulimnadia</i> sp 1	A clam shrimp	G?	SU		
Ostracods					
<i>Ascetocythere cosmetia</i>	Grayson crayfish ostracod	G?	SU		
COLLEMBOLA (SPRINGTAILS)					
<i>Pseudosinella orba</i>	A cave springtail	G4G5	S3		
<i>Sinella barri</i>	Barr's cave springtail	G5	S3		
<i>Sinella hoffmani</i>	Hoffman's cave springtail	G4G5	S3		
ODONATA (DAMSELFLIES & DRAGONFLIES)					
Damselflies					
<i>Amphiagrion saucium</i>	Eastern red damsel	G5	S3		
<i>Argia bipunctulata</i>	Seepage dancer	G4	S3		
<i>Calopteryx dimidiata</i>	Sparkling jewelwing	G5	S3		
<i>Enallagma daeckii</i>	Attenuated bluet	G4	S3		
<i>Enallagma doubledayi</i>	Atlantic bluet	G5	S3		
<i>Enallagma traviatum</i>	Slender bluet	G5	S3		
<i>Enallagma vesperum</i>	Vesper bluet	G5	S3		
<i>Hetaerina titia</i>	Smoky rubyspot	G5	S3		
<i>Ischnura kellicotti</i>	Lilypad forktail	G5	S3		
<i>Ischnura prognata</i>	Furtive forktail	G4	S3		
<i>Lestes congener</i>	Spotted spreadwing	G5	S3		
<i>Lestes eurinus</i>	Amber-winged spreadwing	G4	S3		
<i>Lestes forcipatus</i>	Sweetflag spreadwing	G5	S3		
<i>Lestes inaequalis</i>	Elegant spreadwing	G5	S3		
<i>Lestes vigilax</i>	Swamp spreadwing	G5	S3		
<i>Telebasis byersi</i>	Duckweed firetail	G5	S3		

NATURAL HERITAGE INVERTEBRATE WATCH LIST (continued)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
Dragonflies					
<i>Anax longipes</i>	Comet darner	G5	S3		
<i>Boyeria grafiana</i>	Ocellated darner	G5	S3		
<i>Brachymesia gravida</i>	Four-spotted pennant	G5	S3		
<i>Celithemis fasciata</i>	Banded pennant	G5	S3		
<i>Celithemis verna</i>	Double-ringed pennant	G5	S3		
<i>Cordulegaster erronea</i>	Tiger spiketail	G4	S3		
<i>Cordulegaster obliqua</i>	Arrowhead spiketail	G4	S3		
<i>Dythemis velox</i>	Swift setwing	G5	S2S4		
<i>Erpetogomphus designatus</i>	Eastern ringtail	G5	S3		
<i>Gomphaeschna antilope</i>	Taper-tailed darner	G4	S3		
<i>Gomphaeschna furcillata</i>	Harlequin darner	G5	S3		
<i>Gomphus lineatifrons</i>	Splendid clubtail	G4	S3		
<i>Gomphus rogersi</i>	Sable clubtail	G4	S3		
<i>Lanthus vernalis</i>	Southern pygmy clubtail	G4	S3		
<i>Libellula auripennis</i>	Golden-winged skimmer	G5	S3		
<i>Libellula flavida</i>	Yellow-sided skimmer	G5	S3		
<i>Macromia taeniolata</i>	Royal river cruiser	G5	S3		
<i>Nasiaeschna pentacantha</i>	Cyrano darner	G5	S3		
<i>Neurocordulia obsoleta</i>	Umber shadowdragon	G4	S3		
<i>Stylogomphus albistylus</i>	Least clubtail	G5	S3		
<i>Stylurus plagiatus</i>	Russet-tipped clubtail	G5	S3		
<i>Stylurus spiniceps</i>	Arrow clubtail	G5	S3		
<i>Sympetrum ambiguum</i>	Blue-faced meadowfly	G5	S3		
<i>Tachopteryx thoreyi</i>	Gray petaltail	G4	S3		
ORTHOPTERA (GRASSHOPPERS, KATYDIDS, CRICKETS & RELATIVES)					
<i>Melanoplus celatus</i>	A spur-throat grasshopper	GU	SU		
<i>Melanoplus devius</i>	A spur-throat grasshopper	GU	SU		
<i>Melanoplus impudicus</i>	Immodest spur-throat grasshopper	G4G5	SU		
HETEROPTERA (TRUE BUGS)					
<i>Ctenotrachelus brimleyi</i>	An assassin bug	G?	S2S4		
<i>Isocytus chapmani</i>	Chapman's shore bug	G?	SU		
<i>Nepa apiculata</i>	A water scorpion	G?	S2S4		
<i>Plagiognathus repetitus</i>	Pine barrens plant bug	G?	SU		
<i>Pnirontis languida</i>	An assassin bug	G4?	S2S4		
<i>Ranatra australis</i>	Southern water scorpion	G5	S3		
<i>Tominotus communis</i>	A burrower bug	G5	S2S4		
HOMOPTERA (CICADAS, LEAFHOPPERS & RELATIVES)					
<i>Trialeurodes phlogis</i>	Phlox whitefly	GU	SU		
COLEOPTERA (BEETLES)					
<i>Cicindela dorsalis media</i>	Southeastern beach tiger beetle	G4T4	S3		
<i>Cicindela purpurea</i>	Purple tiger beetle	G5	S3		
<i>Cicindela splendida</i>	Splendid tiger beetle	G5	S3		
<i>Cicindela unipunctata</i>	Flightless tiger beetle	G4	S3		
<i>Diabrotica cristata</i>	A leaf beetle	G?	SU		
<i>Dicaelus sculptilis</i>	A ground beetle	G4G5	S2S4		
<i>Helluomorphoides nigripennis</i>	A flat-horned ground beetle	G4?	S2S4		
<i>Hoperius planatus</i>	A predaceous diving beetle	G?	SU		
<i>Hydraena appalachicola</i>	Minute moss beetle	G?	SU		

NATURAL HERITAGE INVERTEBRATE WATCH LIST (continued)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
COLEOPTERA (continued)					
<i>Hydrobiomorpha casta</i>	A water scavenger beetle	G?	SU		
<i>Megacephala carolina</i> = <i>Tetracha carolina</i>	Carolina big-headed tiger beetle	G5	S3		
<i>Nicrophorus defodiens</i>	A burying beetle	G4	S3		
<i>Paralichas trivittis</i> = <i>Odontonyx trivittis</i>	A beetle	G?	SU		
<i>Pseudolampsis guttata</i>	A leaf beetle	G?	SU		
<i>Rhadine caudata</i>	A ground beetle	G3	S3		
<i>Rybaxis</i> sp 1	A pselaphid beetle	GU	SU		
<i>Urographis triangulifer</i> = <i>Graphisurus triangulifer</i>	A longhorned beetle	G4?	SU		
TRICHOPTERA (CADDISFLIES)					
<i>Heteroplectron americanum</i>	A caddisfly	G?	SU		
<i>Rhyacophila Shenandoahensis</i>	Shenandoah rhyacophilid caddisfly	G3	S3		
LEPIDOPTERA (BUTTERFLIES, SKIPPERS & MOTHS)					
Butterflies					
<i>Atlides halesus</i>	Great purple hairstreak	G5	S3		
<i>Celastrina nigra</i> = <i>Celastrina ebonina</i>	Dusky azure	G4	S3S4		
<i>Enodia creola</i>	Creole pearly-eye	G3G4	S3S4		
<i>Erora laeta</i>	Early hairstreak	G3G4	S3		
<i>Fixsenia favorius ontario</i>	Northern hairstreak	G4T4	S3		
<i>Pieris virginensis</i>	West Virginia white	G3G4	S3S4		
<i>Polygonia faunus smythi</i>	Smyth's green comma	G5T3T4	S3?		
<i>Pontia protodice</i>	Checkered white	G4	S3S4		
<i>Satyrium edwardsii</i>	Edwards' hairstreak	G4	S3S4		
<i>Speyeria diana</i>	Diana fritillary	G3	S3		
Skippers					
<i>Amblyscirtes aesculapias</i>	Lace-winged roadside-skipper	G3G4	S3		
<i>Amblyscirtes carolina</i>	Carolina roadside-skipper	G3G4	S3S4		
<i>Amblyscirtes reversa</i>	Reversed roadside-skipper	G3G4	S3		
<i>Autochton cellus</i>	Golden-banded skipper	G4	S3		
<i>Hesperia leonardus</i>	Leonard's skipper	G4	S3		
<i>Poanes aaroni</i>	Aaron's skipper	G4	S3		
<i>Poanes yehl</i>	Yehl skipper	G4	S3		
<i>Thorybes confusis</i>	Confused cloudywing	G4	S2S4		
Moths					
<i>Abrostola ovalis</i>	A noctuid moth	G4	S1S4		
<i>Acontia delecta</i>	Delightful Bird-dropping moth	G4?	S1S4		
<i>Acronicta dactylina</i>	Fingered dagger moth	G5	SU		
<i>Acronicta funeralis</i>	Funerary dagger moth	G4G5	S1S4		
<i>Acronicta haesitata</i>	Hesitant dagger moth	G5	S1S4		
<i>Acronicta hamamelis</i>	Witch hazel dagger moth	G4?	S2S4		
<i>Acronicta radcliffei</i>	Radcliffe's dagger moth	G5	S2S4		
<i>Acronicta spinigera</i>	Nondescript dagger moth	G4	S1S3		
<i>Acronicta subochrea</i>	Puzzling dagger moth	G4?	S1S4		
<i>Acronicta superans</i>	Splendid dagger moth	G5	S1S3		
<i>Acronicta tristis</i>	A dagger moth	G?	S1S3		

NATURAL HERITAGE INVERTEBRATE WATCH LIST (continued)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
Moths (continued)					
<i>Amolita obliqua</i>	A noctuid moth	G5	S1S4		
<i>Anaplectoides prasina</i>	Green arches	G5	S1S3		
<i>Anticlea multiferata</i>	Many-lined carpet	G5	S1S3		
<i>Anticlea vasiliana</i>	A geometrid moth	G?	S1S3		
<i>Apamea cariosa</i>	A noctuid moth	G4	S1S3		
<i>Apamea finitima</i>	Bordered Apamea moth	G?	S1S3		
<i>Apamea lignicolora</i>	Wood-colored Apamea moth	G5	S1S3		
<i>Apamea plutonia</i>	A noctuid moth	G4	S1S4		
Apameini new genus 1, sp 1	A cane moth	G?	S1S3		
Apameini new genus 2, sp 1	A cane moth	G?	S1S3		
Apameini new genus 2, sp 2	A cane moth	G?	S1S3		
Apameini new genus 2, sp 3	A cane moth	G?	S1S3		
<i>Apodrepanulatrix liberaria</i>	New Jersey tea inchworm moth	G4	S2S4		
<i>Archanaera oblonga</i>	Oblong sedge borer moth	G5	S1S3		
<i>Argyrostralis quadrifilaris</i>	Four-lined chocolate moth	G4	S2S4		
<i>Autographa ampla</i>	Large looper moth	G5	S1S3		
<i>Balsa tristrigella</i>	Three-lined Balsa moth	G5	S1S3		
<i>Bellura anoia</i>	A wetland borer moth	G?	S2S4		
<i>Bellura brehmei</i>	A wetland borer moth	G?	S1S3		
<i>Bellura melanopyga</i>	A wetland borer moth	G?	S1S4		
<i>Cabera quadrigasciaria</i>	Four-lined Cabera moth	G?	S1S3		
<i>Cabera variolaria</i>	Pink-striped willow spanworm moth	G?	S1S4		
<i>Callopistria granitosa</i>	Granitosa fern moth	G4	S1S3		
<i>Caripeta angustiorata</i>	Brown pine looper moth	G?	S1S3		
<i>Catocala angusi</i>	Angus' underwing	G4	S2S4		
<i>Catocala antinympha</i>	Sweetfern underwing	G5	S1S4		
<i>Catocala concumbens</i>	Sleepy underwing	G5	S1S3		
<i>Catocala crataegi</i>	Hawthorn underwing	G5	S1S3		
<i>Catocala insolabilis</i>	Inconsolable underwing	G5	S1S4		
<i>Catocala maestosa</i>	Sad underwing	G5	S1S4		
<i>Catocala miranda</i>	Miranda underwing	G4	S2S4		
<i>Catocala parta</i>	Miranda underwing	G5	S2S4		
<i>Catocala relicta</i>	White underwing	G5	S2S4		
<i>Catocala robinsoni</i>	Robinson's underwing	G4	S2S4		
<i>Catocala sappho</i>	Sappho underwing	G4	S1S3		
<i>Catocala serena</i>	Serene underwing	G5	S1S4		
<i>Chortodes inquinata</i>	A noctuid moth	G?	SU		
<i>Crambidia casta</i>	Pearly-winged lichen moth	G4	S1S4		
<i>Crambidia pura</i>	Pure lichen moth	G4	S1S3		
<i>Cucullia alfarata</i>	A noctuid moth	G4	S1S4		
<i>Cucullia asteroides</i>	Asteroid moth	G5	S1S4		
<i>Cucullia florea</i>	A noctuid moth	G?	S1S4		
<i>Cutina aluticolor</i>	A cypress moth	G4	S3		
<i>Cutina distincta</i>	A cypress moth	G4	S3		
<i>Cyclophora myrtaria</i>	A geometrid moth	G5	S2S4		
<i>Cycnia inopinatus</i>	Unexpected Cycnia moth	G4	S1S4		
<i>Darapsa versicolor</i>	Hydrangea sphinx	G4	S2S4		
<i>Dasychira pinicola</i>	Pine tussock moth	G4	S1S3		
<i>Dasychira plagiata</i>	A tussock moth	G?	S1S4		
<i>Diachrysia balluca</i>	A noctuid moth	G?	S1S3		
<i>Dysstroma truncata</i>	Marbled carpet	G?	S2S4		
<i>Erastria coloraria</i>	Broad-lined Erastria moth	G4	S2S4		
<i>Erastria cruentaria</i>	Thin-lined Erastria moth	G4	S1S3		
<i>Euchlaena marginaria</i>	A geometrid moth	G?	S1S3		
<i>Euchlaena muzaria</i>	A geometrid moth	G?	S2S4		
<i>Euchlaena tigrinaria</i>	Mottled Euchlaena moth	G?	S1S4		

NATURAL HERITAGE INVERTEBRATE WATCH LIST (continued)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
Moths (continued)					
<i>Eueretagrotis attenta</i>	Attentive dart moth	G4	S1S3		
<i>Eueretagrotis perattenta</i>	Two-spot dart moth	G5	S1S3		
<i>Eueretagrotis sigmoides</i>	Sigmoid dart moth	G5	S1S3		
<i>Eulithis explanata</i>	White Eulithis moth	G?	S1S4		
<i>Eulithis molliculata</i>	Dimorphic Eulithis moth	G4	S1S4		
<i>Eupithecia peckorum</i>	Peck's Eupithecia moth	G?	S1S4		
<i>Eutelia pulcherrima</i>	Beautiful Eutelia moth	G5	S1S4		
<i>Euxoa bostoniensis</i>	Boston dart moth	G?	S2S4		
<i>Euxoa declarata</i>	A dart moth	G4G5	S1S3		
<i>Euxoa fumalis</i>	A dart moth	G?	S1S3		
<i>Euxoa obeliscoides</i>	A dart moth	G?	S2S4		
<i>Euxoa redimicula</i>	Fillet dart moth	G?	S2S4		
<i>Euxoa scholastica</i>	Scholastic dart moth	G?	S1S4		
<i>Euxoa violaris</i>	Violet dart moth	G4	S1S3		
<i>Feralia comstocki</i>	Comstock's sallow	G4	S1S3		
<i>Glena cognataria</i>	Blueberry Gray	G4	S1S4		
<i>Haploa colona</i>	Colona moth	G4	S2S4		
<i>Heliomata infulata</i>	Rare spring moth	G2G4	S2S4		
<i>Homochlodes disconventa</i>	Dark Homochlodes moth	G?	S1S4		
<i>Hydraecia stramentosa</i>	Figwort borer moth	G4	S2S4		
<i>Hydriomena bistriolata</i>	A geometrid moth	G?	S1S4		
<i>Hydriomena divisaria</i>	Black-dashed Hydriomena moth	G?	S1S4		
<i>Hypena edictalis</i>	Large Hypena moth	G5	S1S4		
= <i>Bomolocha edictalis</i>					
<i>Hypena sordidula</i>	Sordid Hypena moth	G4	S2S4		
= <i>Bomolocha sordidula</i>					
<i>Iridopsis pergracilis</i>	A geometrid moth	G?	S1S3		
= <i>Anacamptodes pergracilis</i>					
<i>Isoparce cupressi</i>	Cypress sphinx	G4	S3		
<i>Itame abruptata</i>	A geometrid moth	G4	S1S4		
<i>Itame subcessaria</i>	Barred Itame moth	G4?	S2S4		
<i>Lacinipolia lustralis</i>	A noctuid moth	G?	SU		
<i>Lacinipolia olivacea</i>	Olive arches	G5	S1S4		
<i>Leucania commoides</i>	A noctuid moth	G?	S1S4		
<i>Lithacodia albidula</i>	A noctuid moth	G5	S1S3		
<i>Lithacodia concinnimacula</i>	Red-spotted Lithacodia moth	G4	S1S3		
<i>Lithophane innominata</i>	Nameless pinion moth	G5	S1S4		
<i>Lithophane querquera</i>	Shivering pinion moth	G?	S2S4		
<i>Melanchra assimilis</i>	Black arches	G5	SU		
<i>Melipotis jucunda</i>	Merry Melipotis moth	G5	S1S3		
<i>Mesoleuca ruficillata</i>	White-ribbed carpet	G4	S2S4		
<i>Metanema inatomaria</i>	Pale Metanema moth	G?	S1S3		
<i>Metarranthis amyrisaria</i>	A geometrid moth	G4	S1S3		
<i>Metarranthis indeclinata</i>	Pale Metarranthis moth	G4G5	S2S4		
<i>Metarranthis mestusata</i>	A geometrid moth	G?	S1S3		
<i>Morrisonia</i> sp 1	A noctuid moth	G3G4	S2S4		
<i>Nemoria mimosaria</i>	An emerald moth	G?	S1S4		
<i>Oligia crytora</i>	A noctuid moth	G?	S1S3		
<i>Oligia exhausta</i>	A noctuid moth	G?	S1S3		
<i>Orthofidonia exornata</i>	A geometrid moth	G?	S1S4		
<i>Orthosia revicta</i>	Subdued Quaker moth	G?	S1S4		
<i>Pangrapta</i> sp 1	A noctuid moth	G?	S1S3		
<i>Panthea acronyctoides</i>	Black zigzag	G5	S2S4		
<i>Papaipema araliae</i>	Aralia shoot borer moth	G3G4	S3		
<i>Papaipema impecuniosa</i>	Aster borer moth	G5	S1S4		
<i>Papaipema nelita</i>	Coneflower borer moth	G4	S1S4		

NATURAL HERITAGE INVERTEBRATE WATCH LIST (continued)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS	STATE STATUS
Moths (continued)					
<i>Papaipema nepheleptena</i>	Turtlehead borer moth	G4	S2S4		
<i>Papaipema polymniae</i>	Leafcup borer moth	G4	S3		
<i>Papaipema pterisii</i>	Bracken fern borer moth	G5	S3		
<i>Papaipema unimoda</i>	Meadow rue borer moth	G5	S2S4		
<i>Pero zalissaria</i>	A geometrid moth	G4	S2S4		
<i>Petrophora subaequaria</i>	Northern Petrophora moth	G?	S1S4		
<i>Phlogophora iris</i>	Olive angle shades	G?	S1S3		
<i>Plusia putnami</i>	Putnam's looper moth	G?	SU		
<i>Psaphida grandis</i> = <i>Eutolype grandis</i>	Gray sallow	G4	S1S3		
<i>Psaphida thaxterianus</i>	A noctuid moth	G4	S2S4		
<i>Pseudohermonassa tenuicula</i> = <i>Xestia tenuicula</i>	A dart moth	G4	S1S3		
<i>Pyrrhia adela</i>	A sallow moth	G?	S1S3		
<i>Rheumaptera hastata</i>	Spear-marked black moth	G5	S1S3		
<i>Rhodoecia aurantiago</i>	Aureolaria seed borer moth	G4	S2S4		
<i>Schinia bina</i>	Bina flower moth	G4	S1S4		
<i>Schinia florida</i>	Primrose moth	G5	SU		
<i>Schinia nubila</i>	A flower moth	G?	S2S4		
<i>Schinia saturata</i>	Brown flower moth	G4	S1S4		
<i>Sideridis congermana</i>	German cousin moth	G?	S1S3		
<i>Sphinx chersis</i>	Great ash sphinx	G4G5	S2S4		
<i>Sphinx drupiferarum</i>	Wild cherry sphinx	G4	S1S3		
<i>Sphinx eremita</i>	Hermit sphinx	G4	S1S3		
<i>Sphinx kalmiae</i>	Laurel sphinx	G5	S2S4		
<i>Spragueia dama</i>	Southern Spragueia moth	G5	S1S4		
<i>Trichosilia manifesta</i> = <i>Agrotis manifesta</i>	A noctuid moth	G4	S2S4		
<i>Ulolonche modesta</i>	Modest Quaker moth	G5	S1S4		
<i>Venusia cambrica</i>	Welsh wave moth	G5	S1S4		
<i>Xanthorhoe labradorensis</i>	Labrador carpet	G4	S1S4		
<i>Xestia youngii</i> = <i>Anomogyna youngii</i>	Young's dart moth	G?	S1S3		
<i>Zale calycanthonata</i>	Double-banded Zale moth	G4	S2S4		
<i>Zale submediana</i>	A noctuid moth	G4	S2S4		
<i>Zanclognatha</i> sp 1	A noctuid moth	G3G4	S2S4		

APPENDIX 6. RARE SPECIES SIGHTING FORM

Virginia Department of Conservation and Recreation, Division of Natural Heritage
217 Governor Street, Richmond, Virginia 23219
(804) 786-7951

An important component of the natural heritage inventory and protection process involves gathering information from state experts, professionals, and avocational naturalists throughout the state. To facilitate this, the Division of Natural Heritage has developed this rare species sighting form. If you would like to participate in our inventory and protection activities, please take a few moments to complete the attached form for any species from our rare species list. These data will be evaluated for incorporation into the natural heritage database and used exclusively for the protection of the rare species and its habitat. Please send the form to the staff zoologist at the address above. Thank you for your support. The Division of Natural Heritage can only realize the protection of the Commonwealth's natural diversity by working through a network of knowledgeable and concerned individuals.

SPECIES OBSERVED:

DATE OBSERVED:

COUNTY:

USGS QUADRANGLE MAP NAME (if known; mark location on a photocopy of the appropriate map and submit with this form):

LOCATION (Provide a detailed description, including directions from nearest town, road intersection, etc.):

HABITAT DESCRIPTION (Include associated species, elevation, natural features, natural community type, etc.):

POPULATION DATA (Number of individuals observed, age, size, evidence of reproduction,etc.):

LANDOWNER (If know, provide name, address, and phone number):

THREATS TO SPECIES OR EVIDENCE OF HABITAT DISTURBANCE:

REPORTED BY (Include name, address, and phone number):

DATE OF REPORT: